THE UNIVERSITY OF ALBERTA

AN INTRODUCTION TO INTEGRATED SOFTWARE FOR STUDENTS OF EDUCATION, PHYSICAL EDUCATION AND RECREATION - AN INTRODUCTION TO THE SYMPHONY SYSTEM

by

© CHRISTINE L. CUMMINS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled AN INTRODUCTION TO INTEGRATED SOFTWARE FOR STUDENTS OF EDUCATION, PHYSICAL EDUCATION AND RECREATION - AN INTRODUCTION TO THE SYMPHONY SYSTEM submitted by CHRISTINE L. CUMMINS in partial fulfilment of the requirements for the degree of MASTER OF ARTS in PHYSICAL EDUCATION AND SPORT STUDIES.

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This thesis is dedicated to my two best friends:

To my husband, Don, who with his love for me has encouraged me to pursue my goals and dreams in life.

To my sister, Deb, for her guidance and patience as she edited my thesis.

ABSTRACT

The purpose of this study was to develop an effective and reliable program for physical education, recreation or education undergraduate or graduate students, on the uses of a microcomputer. The underlying premise was that microcomputer training would assist these students in accomplishing administrative tasks within a sport organization, or allow them to assist others in accomplishing these tasks.

The study consisted of the investigator creating a manual of lessons using applications from the integrated software system, Symphony. The applications utilized from the Symphony system included word processing, database management, spreadsheet and business graphics. Although a communications application existed within the Symphony software system, this application was not dealt with in this study.

Once the basic lesson structure was developed, an evaluation process began. Participants in this process consisted of four persons indicating interest in learning to use a microcomputer. One by one, each participant completed the fifteen lessons in the four previously mentioned applications. Within each application, lessons progressed from simple to more complex, to allow for advanced students. Each participant was monitored by the investigator in order

that any errors, omissions and/or problems could be corrected before the next participant completed the lesson. Through this process the manual of lessons was modified and its structure, directions and outcome "refined".

At the conclusion of the manual of lessons, each participant completed an evaluation form on the design, development, personal and marketing aspects of the manual.

With the manual of lessons created, tested and initially evaluated, the investigator reported the results and made recommendations.

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Mrs. Bobbie Hodgson
Dr. R.B.J. Macnab
Mrs. Sherry Macnab

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CHAPTER ONE

INTRODUCTION AND PROBLEM

A. INTRODUCTION

Sport organizations are a major component in the delivery system of sport, physical education, fitness and/or recreation. Throughout the past 15-20 years, these organizations and their administrative structures have individually moved from simple administrative systems to more complex administrative systems overwhelmed with increasing informational tasks. For example, today arrangements to host a sporting event are far more complex. Typically, more individuals are involved (from the custodial union to the internal auditor or comptroller); the arrangements are more varied; and the tasks are interrelated with the interests of other systems (Haggerty, 1985).

At the present time, each sport organization is responsible for delivering their program(s) in the most efficient manner. There are many operational issues to consider when delivering sport, physical education, fitness and recreation to the public. There is the technical aspect of providing programs for coaches, officials, and of course, the athletes or participants. However, as important is the administrative, day-to-day component of actually accomplishing these tasks. In order to deal with these

administrative tasks, each sport organization incorporates a technology suitable to completing their tasks. Given the diversity of each sport organization, the technology used to accomplish these tasks varies from structure to structure. For example, for many sport structures electric typewriters are being used to accomplish the day-to-day tasks such as preparing documents, letters, pamphlets, newsletters, financial statements, etc. Printing services are being used to produce documentation for the organizations. Telephone systems are being used for communication purposes. And finally, accounting firms are being used for the financial purposes of the different sport organizations.

In this technical era, some sport organizations are introducing a new technology, microcomputers, into their administrative system. A microcomputer is the smallest general-purpose processing system that can execute program instructions to perform a wide variety of tasks (Sanders, 1983). It can be utilized in various organizational settings to perform input, storage, math-logic, control and output functions. For sport organizations, microcomputers can be readily adapted into the administrative setting once administrators understand the various functions of this tool. In addition, provided this tool is adapted appropriately, it can be accessible to non-technical users.

According to Keen and Morton (1978), effectiveness involves "identifying what should be done and ensuring that the chosen criterion is the relevant one. Efficiency is

related to performing a given task as well as possible in relation to some predefined performance criterion" (p.7). This new technology is believed to enhance both - the effectiveness and efficiency of accomplishing administrative tasks within a sport organization. This is accomplished by allowing individuals to better cope with the increasing data processing requirements.

B. STATEMENT OF PROBLEM

When learning to use a microcomputer, one of the most important considerations is the use of proper instructional software. According to Marshall (1982) there are two choices when selecting software; either buy an existing commercially-produced software, or make your own. The objective of this study was to adapt an existing integrated software system to create an effective introductory microcomputer program for physical education, recreation or education students for sport administrative purposes.

In order to accomplish this task, the capabilities and limitations of this chosen system, as well as the needs of the students required consideration.

Five areas were examined.

1. Establishment of a computer software system to adapt for use by physical education, recreation or education students.
2. Establishment of appropriate examples of administrative tasks within the physical education, recreation or education

field that could be incorporated into the manual using word processing, database management, spreadsheet and business graphics.

3. Creation of a manual of lessons from this chosen software system, that included examples of administrative tasks adaptable for use by physical education, recreation or education students.

4. Establishment of an effective, well organized, and comprehensive manual for use by physical education, recreation or education students.

5. Establishment of a manual of lessons that helps the student avoid the syndrome 'Computerphobia'.

C. JUSTIFICATION

Computer technology is a recent phenomenon for the day-to-day tasks of sport administrators. In fact, some administrators have yet to introduce a computer system to assist them with administrative tasks. However, an increasing number of administrators are recognizing that this new technology has been widely accepted by the business world and is here to stay. The justification for this study was that, as yet, no one had undertaken a project of this kind. Creation of a course strictly for the purpose of instructing physical education, recreation or education students in the uses of microcomputers (utilizing examples from the sport field) was a concept which was proposed by

Macnab (1986).

As a result of the need for sport administrators to maximize their delivery of sport, physical education, fitness and/or recreation to the public or private sectors, administrative tasks must be dealt with in the most efficient manner available. Proper instruction, use and adaptation of computer technology can accomplish this. If administrative tasks within a sport organization (offices, schools, or clubs for example) could be improved through the use of an integrated computer system, administrators could then focus on the delivery system of the organization's activities. With a better understanding of sport administrative tasks, the use of integrated computer technology by graduates should improve the delivery system's efficiency, effectiveness and control of information tasks.

When planning and implementing a computer system in a sport organization, an administrator must consider the personnel, the administrative structure, the age and size of the structure, and the technical application of the system. The success of a new installation will depend heavily on the degree to which the system meets the needs of the entire organization.

Justification for using the integrated software system, Symphony, was the availability of its sophisticated and powerful, yet simplistic, software package. It is adaptable to any sport organization be it simple or complex. Whether the user is a beginner or an experienced computer

operator, the Symphony system offers a comprehensive explanation of five capabilities for the student: word processing, database management, spreadsheet, business graphics and communications. A user can switch back and forth among each of the applications and data entered into one application is available to the other applications, such as spreadsheet data for graphics purposes. In addition, documents displaying data and text in multiple forms are easily created (Athey & Zmud, 1986). Spuck and Atkinson (1983) recommend the software package be well supported. For the Symphony system, contacts exist for users, by phone or mail, and as well, the company LOTUS continues to provide updates of the software system. Though other compatible integrated software systems are available on the market, this system was currently one the investigator was studying and using.

A final justification for this study was that other universities and colleges could potentially incorporate the use of this manual in sport administration courses for their Physical Education, Recreation or Education students.

D. LIMITATIONS

This thesis describes the development, initial use and evaluation of a microcomputer manual for prospective educational use in a university setting. The manual's specific focus was directed toward sport administration for

physical education, recreation and education students' use. The investigator identified potential limitations and discusses them below.

Examples designed by the investigator in the microcomputer manual were chosen with the expectation that they would be representative of actual sport administrative tasks that university students would potentially employ. However, due to the diversity of administrative tasks within the vast field of sport, the investigator recognizes the representativeness of the chosen examples may be limited.

The second possible limitation involves the investigators' choice of the integrated system, Symphony, for the microcomputer manual. It must be noted that there are numerous other integrated systems currently available which were not chosen for this thesis. This system selection was based on the investigator's accessibility to Symphony, not on any particular advantage to the system itself.

The selection of participants for this thesis demonstrated another potential limitation. All four participants were not directly involved in the field of sport administration. As a result, potential differences in their use and eventual evaluation of the microcomputer manual may reflect the participants' sport administration background, or lack of experience in the field, rather than true differences in the manual itself. This is particularly important when considering the participants' evaluation of

the program at the completion of their participation.

The size of the sample of participants is another consideration in this thesis. The purpose of study participants was to refine the manual to a functional level. The sample size was therefore appropriate within this context, as following the third participant, revisions made to the program were negligible. A larger group would not have served the study purposes.

Reliability and validity of the curriculum developed was not established within the scope of this study. This could be considered a limitation of the study. However, the investigator acknowledges that the next step would be to test instrument reliability and validity. This could be done using classes of university students currently enrolled in Physical Education, Recreation or Education. Students could use the manual in its completed form, and using quantitative methods the curriculum's reliability and validity could be established.

Finally, the investigator notes that a time lapse of six to eight weeks occurred between some of the participants' use of the manual and completion of their evaluation form. This time lapse may have affected the participants evaluation of the manual, as recall of details may have diminished during this time lapse. Also, the evaluation occurred only at the completion of the manual and no provision was made for evaluation at the completion of each of the fifteen lessons. This also could have

contributed to participants' selective recall and evaluation of earlier lessons as compared with the final lessons (which would be more current in their memory).

E. EXPLANATION OF TERMS

The following terms are used throughout this thesis:

ADMINISTRATIVE TASKS

Any responsibility within the administrative setting of the sport structure that ensures the day-to-day functioning of the organization. This responsibility can include a simple decision regarding the coffee fund or a more complex procedure such as financial accounting. The administrators and/or assistants can ensure the completion of administrative tasks.

ADMINISTRATOR

is viewed as " a knowledge worker whose primary activity is processing information in order to control the operation of an organization to achieve organizational goals" (Haggerty, 1985, p.1).

BUSINESS GRAPHICS

A system that can convert numeric data into graphs and charts for analysing financial information and/or visually communicating the information to others.

COMMUNICATION

A system that can provide a tool whereby people can exchange information using other computers or for accessing

electronic bulletin boards and public databases.

COMPUTER LITERACY

The ability and basic skills to utilize a computer.

COMPUTERPHOBIA

The act of being afraid of computers; a negative attitude towards the usage of this technology (Jay, 1981).

DATABASE MANAGEMENT

A system that can help store, organize and manage information such as mailing lists, form letters, membership lists or locker records.

DIRECTORY

A list of files or information on a diskette.

DISK DRIVE

The mechanism that reads and records information on a diskette.

DISK OPERATING SYSTEM

A system that enables the computer to access, store, find and move information.

DISKETTE

A permanent data storage medium for microcomputers. It can also be called a disk, floppy disk, microdisk, or hard disk (Lotus, Symphony Reference Manual, 1985).

ENVIRONMENT

For this study, "the context in which you do word processing, produce business graphs, set up and manage databases, analyse spreadsheet data and communicate with other computers" (Lotus, Symphony Reference Manual, 1985, p.

550). The Symphony system provides five different environments because of the differences among these tasks (synonymous with: Application).

HARD DISK

A permanent data storage medium that has a much larger storage capacity than a diskette (Lotus, Symphony Reference Manual, 1985).

HARDWARE

The physical equipment of a computer system: the microcomputer, the disk drive(s), the monitor, the printer and the modem (if any).

MICROCOMPUTER

The smallest general-purpose processing system that can execute program instructions to perform a wide variety of tasks (Sanders, 1983). It has all the functional elements found in larger systems; it can perform input, storage, math-logic, control and output functions. Most microcomputers are a self contained unit and are basically 'single-user-oriented'. Floppy or hard disk drives are used to read and write data and a visual display screen and/or printer system is used to prepare the output form. Microcomputers can be used in various organizational settings or for personal applications.

SOFTWARE

A collection of programs or a set of instructions that directs the microcomputer to perform some specific task (Haggerty, 1985).

SPORT

For the purposes of this thesis the term "sport" will encompass the areas of sport, physical education, fitness and recreation.

SPORT ORGANIZATION

It is an organization, simple or complex, that is responsible for the delivery of sport, physical education, fitness or recreation to a part or the whole of a population in the municipal, provincial, federal, public or private sectors. This organization is responsible for the administration and delivery of the particular sport activity and consists of volunteers and/or employed personnel to perform the necessary tasks to accomplish this delivery process. Such organizations include schools, universities, colleges, recreational and community facilities, fitness centers and sport clubs that are responsible for intramurals, athletics, physical education, community recreation, amateur and professional sports and fitness.

SPREADSHEET

A system that can be used for numeric and financial analyses needed for planning and decision making such as for budgets, payrolls, financial reports, marking systems, league registration, scheduling or scoring, equipment inventories or sport game statistics.

SYMPHONY SYSTEM

The trademark name for an integrated microcomputer software system consisting of five applications: word

processing, database management, spreadsheet, business graphics and communications. All five of these environments are available in this one sophisticated software system.

WORD PROCESSING

A system that can help administrators write letters, reports, schedules, memos, handbooks and other business correspondence.

CHAPTER TWO

REVIEW OF LITERATURE

Extensive literature exists on computers and software systems. However, for the purposes of this chapter, the investigator will limit the discussion to the literature relevant to microcomputers and their software systems: development, capabilities, limitations and uses.

Microcomputer and Software System Development

It seems that microcomputers have been around for decades, when in fact, the first microcomputer was introduced in January, 1975, by a company named Micro Instrumentation Telemetry Systems (MITS). It was called the Altair 8800 and was "simply a metal box next to a large circuit board" (Freiberger & Swaine, 1984, p.41). This machine was sold as a kit and contained a Central Processing Unit (CPU) board, 256 bytes of memory (which is about one paragraph worth of information) and a front-panel board (input-output unit or I/O unit) that controlled the lights and switches on the front of the box (Freiberger & Swaine, 1984). This early machine, though a very basic microcomputer unit, was for the computer industry, a real breakthrough. Computers had previously been very costly and filled entire rooms, whereas the microcomputer was small and much more affordable for the average business person.

However, a problem arose in that the microcomputer

needed software systems in order to be useful. And so, during the early years, most software was developed and ultimately used by the same person or organization that owned the microcomputer. Software had clearly been an afterthought.

By the end of 1975, scores of small microcomputer companies began to appear and for the next 12 years the microcomputer hardware was to undergo continual change and advancement. As the number of computer-based systems grew, libraries of computer software expanded and computer shows, retailing, magazines and hardware and software products appeared in abundance. MITS and the Altair had created an industry that would technically and socially change the world.

The microcomputer became a 'household' word in 1977 when Steve Jobs and Steve Wozniak formed the Apple Corporation and introduced the Apple II microcomputer. In 1979, the Tandy Corporation introduced yet another more advanced microcomputer; the TRS-80 Model II.

Between 1978 and 1982, when microcomputers were first used in homes, businesses and schools, Apple, Commodore and Radio Shack (Tandy) were the primary manufacturers (Athey & Zmud, 1986). However, it wasn't until 1981 that the market really exploded, with the inception of International Business Machines (IBM) Personal Computer. As Adam Osborne indicated, engineer of the first portable computer in 1981, "IBM came into the micro industry and changed the rules

entirely. It's the giant and the dwarfs all over again" (Freiberger & Swaine, 1984, p.283). By 1983, some of the smaller microcomputer companies were going out of business. The technological change drastically reduced the value of their older computers. By 1985, IBM had established a 60 to 70% market share. The market segment for microcomputers included business and professional users, home users, scientific users and educational users (Athey & Zmud, 1986).

Today, after 12 years of transition and development, the microcomputer industry offers much more sophisticated systems. These systems are smaller, less costly, ready-to-use, fully assembled units with better hardware performance. However, as the technology of the microcomputer hardware has rapidly advanced, the software crisis has intensified. "The speed with which new technology has advanced has led to a very competitive environment in which the reaction time available to take advantage of new discoveries is constantly shrinking" (Sanders, 1983, p.593). Software engineers who plan, analyze, design, implement, test and maintain computer software, have been unable to produce quality-supporting software for the enormous capacity of the 1980-era microcomputers (Pressman, 1982). The development of software continues to be more expensive and slower than hardware development because "the functions performed by software are now (and will continue to be) more complex than

the operations performed by hardware" (Sanders, 1983, p.637).

Microcomputer and Software System Capabilities

The appropriate use of microcomputers and software systems can affect people and/or organizations in a positive manner. This applies as well, to those individuals and organizations involved within the field of sport. The individual benefits through job creation and increased job satisfaction (through greater efficiency), while organizations benefit through improved decision-making and planning, better control of resources and greater operational efficiency.

New job opportunities have been one result of the expanding microcomputer era: programmers; information system managers; data base administrators; keypunch operators; software librarians; systems analysts; computer engineers, technicians and operators; computer sales representatives; public relations and advertising representatives; technical writers; and computer teachers to name a few.

"Currently, most microcomputer applications do not change the way one manages, but rather assist a person to manage in a more efficient and perhaps more effective way" (Haggerty, 1985, p.69). This efficiency and effectiveness of microcomputer usage has led to greater job satisfaction for many users. The storage of information is in an accessible form. Time has been saved due to the speed and accuracy with which microcomputers can process large amounts

of data. The user has been freed from repetitive tasks (Buffi, 1984). Flexible software systems have enhanced the capability and productivity of the microcomputer and as well, the user.

With regards to organizational structure, microcomputers have promoted better planning and decision making, better control of resources and greater efficiency of operations (Sanders, 1983), all aspects that most sport organizations are involved with. Sanders, (1983) defines planning as "deciding in advance on a future course of action" (p.96). Planning can be improved by utilizing information systems that can notify managers of problems and then evaluate alternative solutions in order to make a decision. Zeigler and Haggerty (1986), discuss six decision-making tools that would be useful to sport, physical education and/or recreation managers. These include a break-even and profitability analyses, a cost benefit/cost effectiveness analyses, a decision-tree analysis (graphical method), linear programming (algebraic), PERT/CPM (program evaluation and review technique/critical path method) and queueing theory (analytical method) (p.10-11).

Better control of resources is the follow-up to planning. Most organizations have planned goals, and microcomputer programs can be used to actually measure the organizations' performance level. An example might include an inventory control program whereby the system indicates

when to reorder a certain item such as a piece of athletic equipment.

Greater efficiency of operations can benefit both individuals and organizations. For organizations, microcomputer utilization can enhance public service. Registration systems for recreation classes that are hooked into microcomputers can shorten waiting lines. Information entry and retrieval can be faster and more accurate. As mentioned earlier, control of inventory can be more efficient. Higher quality products, with on-board microcomputers (e.g. scoreboards for athletics) can be developed (Sanders, 1983).

Microcomputer and Software System Limitations

Along with the unique capabilities microcomputers and software systems provide for individuals and/or organizations, there are also potential problems that can develop.

The positive outcome of job creation provided by this industry is countered by its opponent - unemployment. That is, involuntarily being out of work or job displacement, which occurs when jobs are eliminated as a result of technological change (Sanders, 1983). Unemployment or job displacement can result because of the enhanced efficiency microcomputers provide, therefore reducing manpower requirements.

Limitations of microcomputers affecting the individual include several issues: 1) depersonalization,

where in order to standardize computer usage, the individual becomes a "number"; 2) a security issue, where people gain access to confidential information; 3) a privacy issue, where the lack of control over data storage, retrieval and communication leads to abusing an individual's right to privacy (Sanders, 1983); 4) acceptance, where every person does not want to learn the microcomputer, and so resist or develop anxiety over this technological advance; and 5) an issue in personnel training, where individuals are not properly trained and therefore, feel frustration using this new technology.

Several factors can also limit the usefulness of microcomputers and their software within organizations. First, the information system design can be one of these limitations. System mistakes can occur through human error of inputing inaccurate or incomplete data or designing the program (Sanders, 1983). Microcomputers are only as functional as the people who design, build, program or use them. As well, microcomputers cannot make value judgments or provide answers to every question (Anderson & Klassen, 1981).

A systems security issue is another potential limitation for organizations. If the system does not protect stored data, the result can be accidental or malicious disclosure; software piracy; economic, property or information loss; inconvenience and loss of privacy. As well, if the system itself is not physically protected,

hardware and software are susceptible to damage or destruction (Sanders, 1983).

A third potential limitation of microcomputers is their software systems. As mentioned earlier, the software systems are not as powerful for microcomputers as for mainframe computers. The technology of the microcomputer hardware has advanced more rapidly than that of software systems, therefore, suitable software is not always available. As well, the adaptability of software is a concern for users. Not all available software on the market today can be successfully utilized by individuals or organizations. In some cases, the software must be specially designed for specific purposes.

The introduction of a new technology often calls for a reorganization within the organization. In some cases, microcomputers may add strain to organizational structures as "work groups may be created, disbanded or realigned to adapt to the introduction of this new technology... Such changes can lead to employee resistance and organizational stress" (Sanders, 1983, p.97).

Finally, hindrances occur for organizations with limited computing resources. These groups have difficulty competing with organizations that have more sophisticated, efficient microcomputer uses for planning and decision making (Sanders, 1983).

Microcomputer and Software System Uses

The potential uses of micrcomputers are extensive and still expanding. Organizations once solely hooked up to large mainframe computers are now also utilizing microcomputers for special applications.

In a broad sense, specific uses of computers or computer-supported applications exist in areas such as the medical profession, the justice system, the banking system, the defense system, the transportation system, and the aeronautical and space program, just to name a few. For the purposes of this chapter, the investigator will focus exclusively on the uses of the microcomputer and available software systems that exist within the area of sport.

Some of the organizations within the sport field that presently utilize microcomputers include universities, colleges and schools; parks and recreation departments; professional sport; the Olympic Games; and sport and fitness clubs (Haggerty, 1985).

1) University, Colleges and School Settings

In the university, college and school settings, microcomputers have been introduced for many purposes. According to Watts (1981) and Roecks (1981), microcomputers can be utilized for 13 purposes within educational organizations for curriculum development and instructional applications (see Appendix B).

To highlight a few, in the area of administration Macnab (1986) suggests 'pre-written' software programs

involving word processing, spreadsheets, database management and business graphics that are specific to the administrative area will satisfy the need. Spuck and Atkinson (1983) outlined a general list of the administrative uses of a microcomputer that is currently available through software (see Appendix C). Athletic departments, recreation departments, teachers and coaches have all begun to organize their programs using microcomputers. In a survey Haggerty (1985) conducted, he concluded that by September 1984, 55% of the Canadian athletic departments were to be utilizing a microcomputer for purposes of enhancing their administrative structures, word processing, team budgets, accounting, budget preparation, mailing lists and setting up tournaments (p.12-13).

In addition, there are software systems available for athletic management in the areas of scheduling, scouting/recruiting, ticketing, budgeting, inventory, registrations, practice planners and numerous more. Many statistical packages are being used for sport such as volleyball, baseball, basketball, hockey, soccer and football.

In the field of research, microcomputers have been utilized for biomechanics of movement, exercise physiology, motor learning, sport psychology, training and conditioning, fitness testing and descriptive analytic research on teaching (Rothstein, 1985). In addition, using the

microcomputer in analyzing the results of research is possible with the self-written or purchased statistical packages. Although these programs are less flexible than the commercial mainframe statistical packages, the microcomputer has the possible advantage of a quick result, analysis and printing period (Rothstein, 1985).

Another application of microcomputers in research is utilization of word processing. According to Rothstein (1985), the microcomputer can be used "to compose, store, edit, revise and print various reports and papers that result from research" (p.277). For this purpose there are many software packages available.

In addition to applications in sport administration and research, microcomputers are being used for instructional purposes in the area of sport at universities, colleges and schools. Computer-managed learning software has enabled the instructor to utilize the microcomputer for management tasks such as testing, record keeping, grading, data analysis and report writing. As well, students' learning is enhanced through instructional drill-and-practice, tutorials, problem solving, simulation and testing (Orshalick, 1982). For example, Barlow and Bayliss (1983) describe programs developed at the University of Delaware for instruction in health and nutrition, lifetime sports, anatomy and physiology and sport science.

In addition to computer-managed learning, another use of microcomputers for instructional purposes at the

university, college or school levels is the provision of computer literacy courses for students. Unlike most programs, the program developed in this study will use specific examples from the sport field. Most programs on the market are oriented more toward the general public.

ii) Parks and Recreation

The second area, parks and recreation departments, have utilized microcomputers for many of the same purposes as universities, colleges and schools. Stuyt and Siderelis (1984) reported that in 1983, 28% of the parks and recreation agencies surveyed were using microcomputer software for word processing, budgeting and accounting, registration, management, inventory, maintenance, payroll, personnel, finance, research, and other purposes such as, attendance, land acquisitions, licences, public relations and reservations (p.36-39).

In addition, some outdoor wilderness recreation programs have begun to utilize microcomputers. The Outdoor Recreation Department staff at Unity College wrote programs to deal with inventory of the equipment room, computerized mailing lists and state canoeing, rock climbing and day hiking areas. As well, a program was developed for the microcomputer to aid in menu-planning for their outdoor recreation programs (Raiola and Sugerman, 1984). These are just some examples of the microcomputer uses for sport administration.

Applications of microcomputers for therapeutic

recreation are just beginning. For therapeutic recreation professionals who teach leisure and recreational skills and programs, microcomputers with single-switch inputs have made it easier for severely physically handicapped children to write, take notes, do schoolwork and learn visual perception, manual dexterity and eye-hand coordination (Beland, 1984).

iii) Professional Sport

Professional sport teams have started to utilize microcomputers as a management tool. Detailed information can be quickly generated prior to a game or even during a game for the purposes of a player's performance against other teams, to determine lineups, or for decisions on who to substitute into the game. Several baseball teams are using microcomputers to plan strategies and make personnel or game decisions, provide statistics on players or previous games, and send information through a mainframe computer, long distances (Haggerty, 1985). Some professional athletes have also utilized microcomputers to invest money and negotiate contracts (Needle, 1981).

iv) Olympic Games

The utilization of microcomputers has drifted into the area of special sporting events. Olympic athletes in the United States are evaluating performances, collecting training data and monitoring and refining techniques through digitized films on microcomputers. This technique is similar to that of high-speed film analysis, however, when

using microcomputers, the film can be viewed instantly (Chin, 1984). According to Chin (1984), the primary advantage of such computerization is that the "athletes have an objective and realistic analysis of their strengths and weaknesses, thus replacing guesswork, intuition and theory" (p.24). As well, Chin (1984) stresses the "instant feedback from the computer immediately helps them improve their skills and drop bad habits" (p.24).

Sport physiologists are also utilizing microcomputers to test Olympic athletes' physical conditions such as strength, heart rate, respiratory rate and oxygen intake, as well as assess their diet in order to develop proper training programs prior to the Olympics.

Microcomputers are also used for the psychological preparation of Olympic athletes (Chin, 1984). Athletes monitor their performances with a biofeedback system which is connected to a microcomputer. Electrodes, that monitor muscle tension, brain waves, heartbeat, breathing and other movements, are attached to the athletes while performing.

Microcomputers are also evident in the Olympic event itself. In 1983, the Maryland Senior Olympics utilized an automated registration program that allowed organizers "to store, retrieve and print information on individual participants, their times and scores in various events, as well as generate reports for the media" (Haggerty, 1985, p.16). Reports that normally took several days to produce were achieved within minutes, saving time and money.

The 1984 Los Angeles Olympics utilized microcomputers extensively. The Olympic torch relay route, which began in New York and travelled 8700 miles across the United States was monitored by microcomputers. The schedule of distances between cities, estimated running times, and a database of the runner's names, addresses, clothing sizes and routes were all on a software system (Chin, 1984). As well, a transportation microcomputer software package called Olympic Athlete Transportation System was developed. It allowed the Los Angeles Olympic Organizing Committee to identify how many buses and drivers would be needed at the 30 different sites (Chin, 1984). To ensure security, a software accreditation system was also developed for the athletes, coaches, volunteers, support staff and press. The badges were printed from this microcomputer system with strips of bar code on the back for further security (Chin, 1984).

In addition, small microcomputers helped coordinate inventory and housing, match equipment and facilities with teams, monitor and update as necessary. Still other microcomputers were used directly to analyze an athlete's performance. Athletes performances were markedly improved by refocusing training and altering technique in ways suggested by the microcomputer (Ward and Maremaa, 1984).

v) Sport and Fitness Clubs

The use of microcomputers and software systems in sport and fitness clubs is yet another indication of their potential in the field of sport. Depending upon the sport

or fitness club, there are numerous software systems available for practical applications. The first application includes programs for physical evaluation; body composition, percent body fat, maximum VO2, biomechanical analysis of performance, training programs, fitness testing, health data and nutrition, personalized exercise programs, sport performance and weight gain or reduction, to name a few.

The second application sport and fitness clubs utilize microcomputers is for administrative purposes. Club management such as organizing swim meets, track and field meets, wrestling dual meets, tennis draws, are all available in current software packages. As well, sport and fitness clubs have access to software systems that allow microcomputers to organize membership, finances, scheduling, inventory control, word processing and mailing lists.

As a final note in this discussion of the uses of the microcomputer and software systems available, the communication capability of many microcomputers deserves mention. Presently, in Canada, an electronic mail network for the benefit of Canadian Sport Associations has been introduced called Envoy 100. With the use of a microcomputer and a modem, National and Provincial sport and recreation club and organizations are able to communicate with National team centres, coaches and athletes, volunteers, National offices, travelling staff and volunteers, and organizers of special events. As a result of this system, members of sport organizations are able to

react more quickly to information, communicate with more people and offset some communication costs by replacing services that are currently performed using telex, telephone and mail or courier.

CHAPTER THREE

METHODS

"The search for solutions to the problem of enhancing program effectiveness does not rest on any single methodological approach because no single, uniform approach will do the job in all situations" (Patton, 1978, p.235). For the purposes of this thesis, developmental and evaluative methods were utilized. The investigator chose to create and evaluate the initial use of a microcomputer program for the purposes of sport administration.

Development was defined by Good (1966) as "the systematic use of scientific knowledge for the production of useful materials, devices, systems, methods or processes, exclusive of design and production engineering" (p.8). However, it is important to understand the uncertainty factor that is associated with a development process. This uncertainty factor is usually highest at the beginning of the developmental stage. At this point, one is concerned with "delineating the problem, devising a solution and constructing the material or, as in this study, a program" (Borich, 1974, p.376). To reduce this uncertainty factor and increase the quality assurance strategy, testing and revision methods or evaluative methods are employed (Borich, 1974).

O'Toole (1971) defined evaluative research as "the

study of the relationship of planned activities to desired objectives" (p.102). It provides feedback for revision and improvement of a product and after the product has been created, evaluation determines the product's utility (Borich, 1974). Evaluation, in this study, was an important part of the development process as it provided feedback for the investigator to make revisions and refine the manual.

"In the last 15 years, evaluation has emerged as a distinctive field of professional social science practices" (Patton, 1982, p.15). Patton's definition of evaluation emphasizes " 1) the systematic collection of information about 2) a broad range of topics 3) for use by specific people 4) for a variety of purposes" (Patton, 1982, p.15). The most vital element in an evaluative study is to have some valued goal or objective. This style of research is more subjective than traditional quantitative methods and is therefore less rigorous. Traditional research tends to test theories, expand concepts or explain behavior to increase knowledge whereas, evaluation aims to achieve a practical goal with emphasis on the utility effect (Borich, 1974, p.378). The evaluative method challenges the effectiveness of the investigator or participant to evaluate a system, or as in this study, a computer program.

An evaluative method was utilized by this investigator toward the objective of developing an effective introductory program to teach microcomputer usage for sport administrative purposes.

The general methods for this study were 1) selection of participants 2) creation of a manual 3) evaluation and revisions of the manual and 4) completion of the manual.

A. SAMPLE OF PARTICIPANTS

The four participants involved in this study were recruited from individuals indicating an interest in learning to use the microcomputer. The manual was specifically created for beginners. The participants who qualified for this study ranged from individuals who had never used a microcomputer, to individuals who had recently started using a microcomputer (within months). None of the individual participants had ever used the chosen integrated software system, Symphony. Two of the four participants had some working knowledge and/or experience in the field of sport administration and currently work in a university setting. The other two participants did not have any background in sport administration. Of the four participants, three had university education ranging from an undergraduate degree to the doctorate level. The fourth participant had worked in the university setting for approximately four years but had no university education. Although computer literacy such as knowledge of terminology, capabilities of microcomputers, hardware and software components and hands-on experience are important when using a microcomputer, they were not required prior to completing

this course.

B. INSTRUMENTATION

Instrumentation is concerned with the tools investigators use to accomplish an objective. For this study the tools employed included microcomputer hardware and software, and a library of reference materials specific to the software system used.

Microcomputer Program

Credibility of information gathered and conclusions derived from this information is a concern to all researchers. As previously stated, this study utilizes developmental and evaluative methods to generate a program for students to learn the potential of microcomputer use in sport administration. Both hardware and software systems and reference material were used to obtain results, in a laboratory setting.

The laboratory was available at the University of Alberta and included an IBM XT microcomputer with 640K memory, two floppy disk drives, an IBM Color Graphics Card, an IBM Color Monitor, and an IBM Proprinter.

In addition to the hardware system, the software consisted of the integrated system, Symphony 1.2, and a diskette on Exploring the IBM Computer. Software is a collection of programs or a set of instructions that directs the microcomputer to perform a diversity of tasks (Haggerty,

1985). The Symphony system integrates five environments into one system. These five environments are: word processing, database management, spreadsheet, business graphics and communication. A brief description of each is presented in the following paragraphs.

The word processing environment aids administrators and/or their assistants in letter and report writing, memos, handbooks and other business correspondence. For instance, a sport organization could produce their own technical manuals, by-laws, policy handbooks, rulebooks or newsletters through the use of this application.

The database management environment can store, organize and manage information. Some examples for a sport organization would be mailing lists, form letters or membership lists.

The spreadsheet environment can be used for numeric and financial analyses needed for planning and decision making. A sport organization could use it for accounting systems, payroll, team statistics, inventory control or yearly planning process.

The business graphics environment can convert numeric data into graphs and charts for analysing financial information and/or visually communicating the information to others. Each sport organization must defend budgets and could convert financial spreadsheets into visual graphics for this purpose.

Lastly, the communication environment provides a tool

whereby people can exchange information using other computers, or for accessing electronic bulletin boards and public databases. Potentially, sport organizations could communicate with other sport organizations throughout the city, province or country, or with other agencies or associations with whom they are involved.

The software on "Exploring the IBM Computer" familiarized participants with the IBM Computer. This familiarization included the various functions of the keys as well as the Disk Operating System (DOS); formatting a diskette, creating a backup copy of a file or diskette, and displaying a directory.

A library of various Symphony reference manuals was also made available for each participant's use. A vast amount of literature has been published with reference to the sophisticated Symphony system. Ewing and Leblond (1984) have written a well-researched and useful book called, "Using Symphony". Along with this publication, the other references that were useful included : Symphony User's Handbook (Weber Systems, 1985), Symphony Getting Started (Lotus, 1985), Symphony How-To Manual (Lotus, 1985), Symphony Reference Manual (Lotus, 1985), Symphony Tips, Tricks and Traps (Feldman, 1985) and Symphony Upgrade Manual 1.2 (Lotus, 1986). In addition, 'Symphony' system experts at the University of Alberta assisted the investigator during the course of study.

The Manual

Training in microcomputer technology for physical education, recreation, and education students was the aim of the manual. The majority of administrative tasks cited earlier within each of the environments, are currently being utilized by sport administrators. The creation of a manual, by the investigator, was the first step in the study process. Various administrative tasks that physical education, recreation and education students would have to accomplish while working in a sport structure had to be established. The manual consisted of fifteen lessons, utilizing chosen examples from the sport field. These lessons made use of word processing, database management, spreadsheet, and business graphics applications. Applications were identified through a literature review of the Symphony system and the combined knowledge of the investigator and advisor, and their experience in the administrative field. Each application progressed from simple to more complex tasks within each set of lessons.

The second step was to have selected participants complete a lesson to test the effectiveness of each lesson. Errors, omissions and questions were noted and presented to the investigator.

The third step involved the investigator's completion of necessary revisions to each lesson, prior to the next participant completing the lesson. This process ensured the refinement of each lessons' structure and directions between

participants.

The fourth step involved each participant completing an evaluation form about the manual (see Appendix A). This form included sections on manual design and development, personal ideas about the manual, and opinions on the marketability of the manual.

In the final step the investigator completed revisions of the manual.

Manual Evaluation

"The purpose of evaluation is to demonstrate that the materials developed are in some way better for producing some intended set of objectives than competing materials, or that there are no competing materials available for the stipulated set of objectives" (Borich, 1974, p. 101).

The manual evaluation was twofold; an ongoing evaluation that occurred concurrently with the participants use of the manual, and an overall evaluation completed following the participants completion of their task.

Utilization of the information obtained was continuous once participants began to complete the designed lessons. Due to the small number of participants, the investigator was able to continually make revisions as each participant completed a lesson of the program.

As each participant completed the entire manual of fifteen lessons, additional data was collected from each participant through an evaluation form the investigator had developed (see Appendix A). The evaluation form was divided

into four areas. The first section on the design of the manual referred to the content and format of the lessons. The second section on development referred to the purpose, the capability and the practicality of this manual. The third section, titled personal, was concerned with participants personal perception of the manual. The final section, titled marketing, questioned participants on their perception of the marketability of the manual.

After these evaluation forms had been completed the investigator proceeded to finalize all errors, omissions and corrections of the manual lessons.

Due to the small number of evaluations completed, tabulations were manually noted in order to complete revisions of the entire manual for a finished product.

From the investigator's observation and direct contact with each participant, a relatively accurate account of an error-free program manual was produced.

CHAPTER FOUR

RESULTS

This study addressed three phases in the development of an effective and reliable introductory microcomputer program for sport administrative purposes.

The first phase involved creating a set of lessons that could be utilized as an introductory microcomputer manual.

The second phase involved four study participants completing each manual lesson within the four different computer applications the investigator had developed.

The third phase had study participants complete an evaluation form on their use of the microcomputer manual.

The results of these three phases are recorded below.

A. MANUAL AND LESSON OUTCOME

The microcomputer manual consisted of fifteen lessons of administrative tasks in the four computer applications: word processing, database management, spreadsheet and business graphics. Lessons progressed from basic to more advanced tasks as participants worked through the manual.

Lesson 1 introduced the student to what the Symphony software system is and its capabilities within the five different environments; word processing, database

management, spreadsheet, business graphics and communications. As well, a comparison was indicated between an integrated package versus a stand-alone package of software. Hardware requirements for utilizing the Symphony system was also outlined for the student. Lesson 2 allowed the student to begin using the microcomputer. The program encouraged the student to familiarize themself with the IBM Computer and the various functions the keys perform. In the manual, this lesson was also a referral section for the student. Lesson 3 permitted the student to perform their own installation process prior to beginning lesson 4.

In order to make the program an appropriate microcomputer introduction for sport administrators, lessons 4 through 15 selected administrative tasks from the sport field. All examples are currently part of various sport administrative systems. In the word processing environment, four lessons (4,5,6 & 7) introduced the student to a variety of tasks. The introduction, lesson 4, allowed the student to create a letter to a participant of a sport camp. Lesson 5, an intermediate task, was a two page sport lesson plan the student was required to create. Lesson 6, another intermediate task, involved the creation of a two page paper, while lesson 7 was an advanced task of altering a two page paper.

In the database management environment, the student progressed through three lessons. Lesson 8 introduced the student to the creation of a small database for a sports

camp, in order to be able to produce mailing labels. Lesson 9, an intermediate task, allowed the student to create a form letter to sport camp participants of the small database. And lesson 10, a more advanced lesson, allowed the student to make advanced alterations to the small database previously developed.

For the spreadsheet environment, two examples of sport administrative tasks were created in three lessons. The introductory lesson (11) allowed the student to design a scoring spreadsheet for a sport camp. Lesson 12, an intermediate task, allowed the student to make alterations to this spreadsheet. And lesson 13, the advanced task, encouraged the student to create a school grading spreadsheet that utilized calculations.

The final environment the investigator focussed on in the study was the business graphics environment. Using the sport camp scoring spreadsheet, the student created a bar graph in the introductory lesson 14. The advanced lesson (15), encouraged the student to create a pie chart graph using the attendance of participants at three different sport camps.

Each outcome from lessons 4 through 15 inclusive will be documented at the end of the lesson structure.

LESSON 1 - INTRODUCTION AND ACKNOWLEDGEMENTS

The use of computers in all aspects of society has grown rapidly in recent years. This trend has spread to Sport and Physical Education, albeit somewhat slowly. There is no doubt that extensive use of computers has been made in certain research areas such as biomechanics, psychology and to a lesser extent measurement and evaluation of fitness and other components of sports performance. More recently video laserdiscs, controlled by personal computers, have penetrated the area of Physical Education. However, the use of both main frame and personal computers in somewhat specific research applications in sport and physical education has not been matched in the administrative applications for which they are so suited.

In 1966, at the University of Alberta, a mainframe computer program was developed to assign some 4,000 students to required Physical Education classes each term. The assignment was based on the student's preferred choice of activity, available time slots in the student's weekly schedule, the timetable of courses available in various activities and the quota of students permitted in each class section (Macnab & Conger, 1968). Some twenty years later, a similar program, designed for the personal computer, was developed at George Mason University (Stein, 1987). However, examples of the use of computers to solve administrative problems have been the exception rather than the rule.

A deterent to the widespread use of computers in Physical Education and Sports Administration has been the distinct weakness in computer literacy among graduates of undergraduate programs in the field. But this no longer need be a factor.

In the early development of the use of computers a knowledge of programming was essential. Initially, the programming languages were 'machine' level and involved step by step programming of the particular computer, using instructions which were complex and not particularly meaningful to the user. Somewhat later "symbolic" languages were developed which helped to 'interpret' symbols which were meaningful to the programmer into information which could be understood by the computer. Still later, specialized languages such as Fortran and Cobol were introduced which met particular requirements, namely scientific and engineering, in the case of Fortran and business applications, in the case of Cobol. This made it possible to incorporate certain functions into the language. For example, with Fortran it became possible to generate the logarithm of a given number using one instruction whereas, even symbolic languages required in excess of 50 individual instructions to generate the same value. Cobol, on the other hand, greatly facilitated the preparation of business reports.

With the explosion in the use of Personal Computers came the popularity and development of many other languages such

as Basic and C. Others, such as dBase III, have been developed for specialized needs such as database management. The question then arises as to which of the myriad of programming languages should students in university sports administration programs be taught? The answer is none of the above.

Potential physical educators and sports administrators require an introduction to computer literacy which both encourages them to make immediate use of computer technology but which also serves as a base for keeping abreast with the rapid developments which will occur in the future. The answer lies in 'pre-written' general programs which are flexible and permit customization to meet specific needs. Such programs involve individual software dedicated to word-processing, to handling data through spreadsheets, to database management, to graphical representation of data or to communications applications. These individually dedicated programs have been further developed so as to integrate with eachother.

Integrated software is an ideal management tool. It incorporates several functions which may be used separately or together. One such program is SYMPHONY which is produced by the Lotus Development Corporation, the developers of the most used spreadsheet program LOTUS 1-2-3. SYMPHONY incorporates word processing, spreadsheet, database management, graphics and even communications into one powerful piece of software. The user can call upon one

function, such as word processing, to type a letter or report. But at the same time, he or she can access information from a database or spreadsheet to augment the report. It is even possible to present certain information in graphical form. Most importantly, all these functions may be carried out without any knowledge of classical computer programming.

This text is designed to provide students of Physical Education and related areas with an introduction to the use of the integrated software package SYMPHONY. Examples are drawn from the sport and physical education area. Projects are included which involve the creation of models which are realistic and from the area. This background prepares the user to make immediate use of computers. It introduces students to the plethora of applications which can benefit from computer technology. In short, it "demystifies" the computer. It also prepares the potential graduate for situations where "non-integrated" software is used such as LOTUS 1-2-3, MULTIMATE, WORD PERFECT and dBASE III. Linkages between these "non-integrated" products are possible and the student trained in "integrated" software will be constantly looking to these possibilities. He or she will also quickly adapt to new products and be capable of instructing support staff in their use.

The format followed in this book incorporates step by step procedures to lead the user through a series of specific examples which are drawn from physical education

and sports. Drawing from this specific background, students are then encouraged to develop unique modifications to the examples provided.

A) What is SYMPHONY?

The integrated software package SYMPHONY combines five applications or work environments into a single composite program. The applications or work environments are:

1. Word Processing
2. Database Management
3. Spreadsheet
4. Graphics
5. Communications

B) The Capabilities of SYMPHONY

1. Word Processing

Word Processing is perhaps the best known computer application in the business field. Although hardware totally dedicated to word processing was and still is popular, increasingly software is used to convert the personal computer into a word processor. These products such as WORD PERFECT, WORDSTAR, MULTIMATE etc. allow for the preparation of extensive reports or for the preparation of "individualized" letters to many individuals. An example of such a letter is presented below. The "underlined" areas of the letter allow for the "inserting" of an unlimited number of individual names, addresses etc. The final letter excludes the "underlining" and hence it appears as if it were individually typed to Mary Jones.

Athabasca Summer Sports Camp
P.O. Box 99
Athabasca, Alberta, Canada
TOK OYO
September 20, 1987

Mary Jones
712 Arch Street
Four Hills, Alberta, Canada
T6H OG5

Dear Mary:

It was a pleasure to have you as a participant in our Sports Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our success.

By the way Mary, I note that your birthday is rapidly approaching. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to this years program. Best wishes and Happy Birthday Mary.

Sincerely,

Janet Smith
Camp Director

2. Database Management

A database essentially contains, in electronic format, the information contained in a well organized index card file. By means of specialized "templates" a database can be customized to meet specific needs. A database might be set up to include all suppliers of equipment used by a Sports Federation. The database could include "fields" for name, address, phone number, contact person, equipment handled,

method of payment required etc. Another database might catalogue all officials. An example of a specific database is given below. This particular "template" setup is for a database to include all participants in a summer sports camp.

SUMMER SPORTS CAMP

Name:	*Jones, Mary*
Address:	*712 Arch Street*
City:	*Four Hills*
Province:	*Alberta*
Country:	*Canada*
Postal Code:	*T6H 0G5*
Sex:	*Female*
Sport:	*Soccer*
Position:	*Goaltender*
Date of Birth:	*10/22/70*
Birthmonth:	*Oct*

An important feature of the integration of the "word processor" with a "database" is that the personal computer can be instructed to search the database to seek entries which meet certain criteria. The letter given to Mary Jones is designed to be sent to individuals prior to their birthday. Letters would be prepared for only those individuals whose birthdays fall within the "criterion period". Another example of the use of restrictive criteria would be a letter announcing a special soccer clinic for goaltenders. Here the database would be searched for soccer players, but as a second criterion, only those listed as goaltenders.

3. Spreadsheet

The spreadsheet is equally versatile for Physical

Education and Sports applications. A spreadsheet may be used to record and update the individual scoring in a league. It may also be used to set up a budget for an organization since it allows for "testing" of budget adjustments as to their effect on the "bottom line". They may also be used in decision making applications such as "Queueing Theory". A spreadsheet for an individual league scoring application is shown below. Each time an update is needed, only the goals or assists or penalty minutes of those players who participate in scoring in the period in question (October 20 to October 27), need to be changed. In the example given, only the values of Smith, Winston, and Green require updating. When this is done, a command is given to re-sort on column five namely, that of PTS. This sort would ensure the output given for October 27. Another command could be given to re-sort based on column four (PEN. MINS.) which would rank the players on that criterion.

LEAGUE INDIVIDUAL SCORING

FOUR HILLS HOCKEY LEAGUE

(scoring as of October 20, 1986)

	GOALS	ASSISTS	PEN. MINS.	PTS.
SMITH	8	12	38	20
WINSTON	7	12	8	19
JONES	5	13	12	18
GREEN	10	7	22	17

BROWN	3	12	4	15

FOUR HILLS HOCKEY LEAGUE

(scoring as of October 27, 1986)

	GOALS	* ASSISTS	PEN. MINS.	PTS.
WINSTON	10	12	6	22
GREEN	12	9	22	21
SMITH	8	12	48	20
JONES	5	13	12	18
BROWN	3	12	4	15

4. Graphics

Data represented in graphical form is eye catching and effective. Reports submitted by sports organizations for funding and other purposes can greatly profit from this technique. Software is now available to convert spreadsheet data into graphical form such as bar-graphs, pie-chart graphs, line graphs and many more.

5. Communications

The communication or transfer of data from a computer in one location to another computer in a remote location is made possible through the fifth work environment. A modem is used to transmit data, most usually over a telephone system. This feature, while important in many applications, is not part of the course which follows.

C) Integrated vs Stand-Alone Packages

SYMPHONY, as an all inclusive, integrated, software package, has certain advantages over stand-alone dedicated packages which specialize in individual environments such as word processing, database or spreadsheet. However, there are also some minor sacrifices which are made in taking this approach.

Compared to specialized packages such as Word Perfect (Word Processing), dBase III (Database) or Lotus 1-2-3 (Spreadsheet), the integrated package SYMPHONY sacrifices some of the specialized power of the individual packages. However, this sacrifice is slight, and is more than balanced by the convenience of having all environments covered under one package. It is also obviously easier to learn one piece of software than it is to learn four.

D) Hardware Requirements

SYMPHONY is designed to be used with the IBM PC, IBM XT, IBM Personal System/2 and a variety of other compatibles. A minimum internal memory of 320K is required but 640K is recommended. Either two double sided, double density floppy disk drives or one floppy disk drive and one hard disk drive must be available.

Although SYMPHONY will run using a monochrome monitor, the full advantage of its color graphics require a color graphics monitor. SYMPHONY also supports a wide range of printers and graphic printers, including color printers.

The lessons included in this book were developed using an IBM XT with 640K and two floppy disk drives. An IBM Color

Graphics Card and Color Monitor as well as an IBM Proprinter were also part of the system. The lessons have also been tested using an IBM Personal System/2 Model 50 computer with a Model 8513 Color Monitor and an Epson printer. Individuals who wish to use other configurations of hardware should consult SYMPHONY reference material to verify compatibility.

E) Getting Started

The philosophy which overrides the preparation of this text is that the average user of any powerful software system will only use a small percentage of the features of that software. SYMPHONY is no exception. The examples used in the lessons which follow, make use of the most critical and basic features. Those students who wish to progress to the many advanced features not covered, should consult other references and in particular those which are supplied at the time of purchase of SYMPHONY.

Furthermore, the casual or infrequent user of any software must undergo a form of "retraining" each time the software is used. The lessons which follow, incorporate typical uses such as writing a letter, setting up a database, merging names in a database with a letter, developing a spreadsheet and transcribing the data into graphics. These types of situations recur in any use of integrated software. Hence the casual user can, in the future, refer back to the lessons as a "refresher" course for most procedures.

Examples have been outlined using the four popular computer work environments namely database, spreadsheet, word processing and graphical representation. The Physical Educator who is familiar with these applications is capable of setting up a small computer system or to intelligently aid in supervising the installation of a larger system. The question becomes how does one give students of Physical Education a strong background in these areas? Fortunately the advent of integrated software provides an excellent solution. In the pages which follow, we will learn, in a step by step manner, how to set up many examples using SYMPHONY.

LESSON 2 - EXPLORING THE IBM COMPUTER - A REFERRAL SECTION

Objectives:

1. To familiarize the student with the IBM Computer and the various functions of its keys by means of an exercise.
2. To provide a written summary of the various functions the keys can perform.

Points to Remember:

1. The diskette on "Exploring the IBM Personal Computer" used for this exercise can only be utilized with computers produced by IBM Corporation.

A) The Keyboard Exercise

1. Insert the diskette, "Exploring the IBM Personal Computer", into drive A located at the left or on top of your computer drive. Close the door.

2. Turn on the computer and the monitor. The diskette will begin itself or self-load.

3. Read each of the screens and follow the instructions carefully.

4. If at any time you want to end the lesson, remove the lesson diskette from the disk drive A, place it in its protective cover and turn off the computer and the monitor.

5. If at any time you want to try a new program, remove the lesson diskette and insert a new program diskette in its place. Then press the Ctrl, Alt, and Del key all at once to RESET the computer.

B) Summary of Keyboard Functions

The following information is a review of what you learned from the keyboard exercise so you can refer back to it without going through the whole diskette again. Additional information is also included in this section that you will learn throughout this manual.

I) Chapter 1 - Instructions

Page Down (PgDn) key - to view the next page

Page Up (PgUp) key - to view the previous page

Alternate (Alt) key works like a Shift key to alter the meanings of the PgDn and PgUp keys.

Alt & PgDn keys - to review the chapter

Alt & PgUp keys - to skip to the next chapter

II) Chapter 2 - The Keyboard

Note: certain keys might be used differently from one program to the next.

TYPEWRITER KEYS are arranged like a typewriter and used in the same way.

2 Shift Keys - will cause the keyboard to assume the shift mode.

i) To assume UPPER CASE (CAPITAL LETTERS) you press the shift key down.

ii) To assume lower case (small letters) the shift key remains in normal position.

iii) To type the top row of the keyboard, you assume UPPER CASE by pressing the shift key down.

iv) To reverse the action of the Caps Lock key with the letters A-Z, you press the shift key down (will be explained later in more detail).

v) To reverse the action of the Num Lock key with the numbers, you press the shift key down (will be explained later in more detail).

Backspace Key - when entering data, will cause the last character entered to be erased. Also in pointing situations will send the cell pointer to the previous location.

Carriage Return or Enter Key - works like a carriage return on a typewriter and moves the cursor to the start of a new line. It is used to indicate to Symphony that an entry or operation has been completed, for example, the end of a paragraph.

Tab Key - will move the cursor to the next tab stop.

FUNCTION KEYS are multipurpose keys and are used differently for various programs. The following is a list of uses for

the Symphony Program.

F1 (HELP)	Will display the HELP screen
F2 (EDIT)	Will allow you to change an entry field when in the SHEET environment
(JUSTIFY)	Will justify the current paragraph when in the DOC environment
F3 (ABS)	Will indicate that the data to follow is an absolute address when in the SHEET environment
(INDENT)	Will indent text in the current paragraph when in the DOC environment
F4 (CAPTURE)	Will capture data in a range, and/or printer when in the SHEET environment
(ERASE)	Will erase an indicated block of text when in the DOC environment
F5 (GOTO)	Will move the cell pointer to a designated cell or range
F6 (WINDOW)	Will change the current window
F7 (USER)	Will execute a macro which is a sequence of keystrokes you attach to a single letter key
F8 (CALC)	Will recalculate formulas in a worksheet
F9 (SERVICES)	Will activate the Services Menu
F10 (MENU)	Will activate the environment menu that is related to the current window type
ALT & F1 (COMPOSE)	Will allow you to enter characters that are not located on the keyboard

ALT & F2 (WHERE)	Will display the page number and line number of current line
ALT & F3 (SPLIT)	Will move the text following the cursor to the next line
ALT & F4 (CENTER)	Will center the current line between the margins
ALT & F5 (LEARN)	is used for creating macros
ALT & F6 (ZOOM)	Will expand the current window to fill the screen
ALT & F7 (STEP)	is used for debugging macros
ALT & F8 (DRAW)	Will update the current window
ALT & F9 (SWITCH)	Will switch back to the previous window type environment
ALT & F10 (TYPE)	Will change the window type/environment

CURSOR KEYS will move the cursor around the screen.

Left Arrow	- will move left one character
Right Arrow	- will move right one character
Down Arrow	- will move down to the next line
Up Arrow	- will move up to the previous line
Home	- will move to the beginning of your file
End & Home	- will move to the end of your document
End & Up Arrow	- will move to the start of a paragraph
End & Down Arrow	- will move to the end of a paragraph

End & Left Arrow - will move to the left edge of the text

End & Right Arrow - will move to the right edge of the text

End & Return - will move to the next hard carriage return

End & a Character - will move to the next occurrence of the 'character' you typed

Note: when striking one of the four arrow keys (left, right, down and up), or End & the four arrow keys, or End & the Return key these keys will continue to react in the indicated ways.

NUMERIC KEYPAD is arranged like a calculator. Num Lock will cause the cell pointer keys to output numbers.

1. Press Num Lock to switch the cursor keys into Number keys.

2. Press Num Lock again to return to cursor key mode.

MODIFIER KEYS the Control (Ctrl) and Alternate (Alt) keys work like shift key to alter one key at a time.

Alternate Key - is used with alphabet (alpha) keys to invoke keyboard macros. It is also used with function keys to invoke functions outlined in gray on the function key template.

CAPS LOCK KEY switches from UPPER CASE and lower case. Notice that only the letter keys, A-Z, can be capitalized. Caps Lock mode will not allow typing symbols that appear on the tops of other keys.

1. To assume UPPER CASE mode press Caps Lock key and notice that Cap is indicated at the bottom right position of the

control panel on the monitor.

2. To assume lower case mode, press Caps Lock key again and the bottom right position should now be clear on the monitor.

SCROLL LOCK KEY In certain instances, you may want to see other parts of the document without moving the cursor.

1. To assume the Scroll Lock mode, press Scroll Lock once and notice that it is indicated at the bottom right position of the control panel on the monitor.

2. To turn the Scroll Lock mode off, press Scroll Lock again and the bottom right position on the monitor should now be clear.

Scroll Lock & Left Arrow - moves text on screen right one-quarter of window width

Scroll Lock & Right Arrow - moves text on screen left one-quarter of window width

Scroll Lock & Up Arrow - moves page down one line

Scroll Lock & Down Arrow - moves page up one line

OTHER KEYS or INDICATORS

Escape (Esc) - will cause Symphony to back up one step

Delete (Del) - will erase the character at the current pointer location. In the FORM environment, will delete the current database record

Space Bar - will erase the character at the current pointer location

Print Screen - when pressed with the Shift Key, will

(PrtSc)	cause the data on the screen to be sent to the printer
*	- is used to indicate multiplication
/	- is used to indicate division
+	- is used to indicate addition
..	- is used to indicate subtraction
BIG LEFT (Ctrl & Left Arrow)	- will move the cursor or cell pointer left to the beginning of the previous word or cell
BIG RIGHT (Ctrl & Right Arrow)	- will move the cursor or cell pointer right to the beginning of the next word or cell

MODE INDICATOR MESSAGES IN THE CONTROL PANEL

COMM	- will indicate Symphony is operating in the communication mode
DOC	- will indicate Symphony is operating in the word processing mode
EDIT	- will indicate Symphony is prepared to edit the current contents of the control panel
ERROR	- will indicate an invalid entry or procedure was attempted
FORM	- will indicate Symphony is operating in the database management mode
GRAPH	- will indicate Symphony is operating in the graphics mode
LABEL	- will indicate the current contents of

the control panel is a label

MENU - will indicate Symphony is awaiting a menu selection

POINT - will indicate Symphony is awaiting the specification of a cell or group of cells

SHEET - will indicate Symphony is operating in the spreadsheet mode

VALUE - will indicate the current contents of the control panel is a value

WAIT - will indicate the user should not enter commands or characters during this mode

III) Chapter Three - Disk Storage and DOS (Disk Operating System)

DISK DRIVES

Disk drives let you store and manipulate a large amount of information with ease.

1. A fixed disk drive or hard drive is usually named C:.
2. A one disk drive (floppy diskette) is used as both A: and B:.
3. A two disk drive (floppy diskettes) is used as A: and B: respectively.

DISKETTE CARE

1. Do not touch exposed recording surfaces of diskette and keep away from dust, ashes, heat, moisture, magnets and magnetic fields.
2. Before inserting diskette into the appropriate disk

drive, remove it from its protective cover.

3. Return the diskette(s) to their protective covers when you are finished.

WRITE PROTECTION

1. A piece of foil put over the write protect notch to protect important programs from being erased.

2. The drives will not write on a protected diskette until you peel the tape off.

FILE

1. Is a collection of information.

2. Each file has a unique short name of not more than 8 letters and/or numbers, for example, SCORE2. Do not use punctuations or blank spaces.

DISK OPERATING SYSTEM (DOS)

1. DOS is a Computer program that manages files and directories.

2. The DOS diskette is permanently write-protect so cannot be erased.

3. A> is called the DOS prompt.

ENTERING DOS

1. Insert IBM DOS diskette in drive A and close the door.

2. Turn the monitor and the computer on.

3. Enter the DATE, if necessary, in the form MM-DD-YY (12-28-87) and press ENTER.

Note: some computers will provide the date automatically.

4. Enter the TIME, if necessary, in the form HH-MM (12-45) using the 2400 hour clock system and press ENTER. Note:

some computers will provide the time automatically.

5. The A> will appear. You are now entered into DOS.

6. The following commands can be used for the appropriate result:

A>*DIR* - will display a directory

A>*FORMAT* - prepares or formats a new diskette

A>*COPY* - copies an individual file

A>*DISKCOPY* - copies an entire diskette

DIRECTORY

1. Stores the names and vital statistics of files.

2. Each file in a directory must have a different name.

3. To display a directory, type in *DIR* after the A>, making sure you have your diskette in the proper disk drive.

4. If you wish to indicate which disk drive you want the DIR to come from, type *DIR A:* (for example) after the A>.

FORMATTING A DISKETTE

You must custom fit the diskette to your machine. To do this is called FORMATTING. Formatting sets up empty files and assigns them addresses recognizable to your system.

1. With your DOS diskette in drive A, type *format b:* after the A> and then press ENTER.

2. Insert a new diskette in drive B and press ENTER when ready. (there are 39 tracks to a diskette so wait until the screen displays FORMAT COMPLETE)

3. Then the computer will ask if you want to format another diskette. If you do not want to format another diskette, type in *n* for No. If you wish to format another diskette,

type in *y* for Yes and follow step 2. above again.

CREATING A BACKUP COPY OF A FILE OR DISKETTE

It is important to make backup copies of your work in case you accidentally erase or lose your file. Follow these directions to backup your file or diskette:

Copying A File

Note: before you copy a file, you must have a formatted diskette ready to use for your backup diskette. Refer to previous section on Formatting a Diskette.

1. Make sure the A> appears on the screen.
2. Place the diskette that includes the file you wish to copy in Drive A (SOURCE diskette) and close the door.
3. Place your backup formatted diskette in Drive B (TARGET diskette) and close the door.
4. After the A>, type *Copy A:file name and extension (space) B:file name and extension*. (see 7. below for *File Name Extensions*) We will copy the named file from the diskette in drive A to the diskette in drive B.
5. Press Return and your file will copy. Make sure to wait until the process is finished; the red light will turn off on drive B.
6. After the A> appears, type *dir b:/w* to see if your file was copied to your target diskette in drive B.
7. Remove the diskettes from drive A and B and place in protective cover. Store away in a safe place as this is your backup copy.

Note: these are called a *File Name Extension* and indicate

the type of file:

.APP indicates Add-in application file

.CCF indicates Communications configuration file

.CTF indicates Character code translation file

.PIC indicates Graph (picture) file

.PRN indicates Print file

.WR1 indicates Worksheet file

Copying A Diskette

1. Make sure the A> appears on the screen.

2. Keep the DOS diskette in drive A and after the A>, type *Diskcopy A: B:* and press Return. We will copy the entire diskette in drive A to the diskette in drive B.

3. Place the diskette you wish to copy in Drive A and close the door. (SOURCE diskette)

4. Place your backup diskette in Drive B and close the door. (TARGET diskette)

Note: you do not have to format your backup diskette as it will be formatted as you are copying on to it.

5. Press Return and your diskette will copy. Make sure to wait until the process is finished; the red light will turn off on drive B.

LESSON 3 - INSTALLATION PROCESS

Objectives:

1. To install SYMPHONY to suit the particular hardware setup which is being used. This includes capability and type of computer, monitor, and printer which will be used

with SYMPHONY.

Points to Remember:

1. The SYMPHONY system can be started without first using the install program. It is possible to create worksheets, databases and word processing documents. However, it is not possible to display graphs, use a printer, or communicate with other computers unless the installation process has been completed.

2. The communication or transfer of data from a computer in one location to a second computer in a remote location is made possible through the "communications" environment of SYMPHONY.

3. In the procedure which is outlined below, it is assumed that the equipment is an IBM PC or XT with two floppy disk drives, IBM Color Graphics Card and Color Monitor, and an IBM Proprinter.

Installation Process

We are using the two-diskette system, therefore, will only provide instructions for this system. Note: If you were using a hard disk system, the instructions would be different.

1. Insert IBM DOS diskette in drive A and close the door.
2. Turn the monitor and the computer on.
3. Enter the DATE, if necessary, in the form MM-DD-YY (12-28-87) and press ENTER.

Note: some computers will provide the date automatically.

4. Enter the TIME, if necessary, in the form HH-MM (12-45)

using the 2400 hour clock system and press ENTER. Note: some computers will provide the time automatically.

5. The A> will appear. You are now entered into DOS.

6. Take the write protect tab off the Symphony Program diskette. (you will be recording information on this diskette later) it is the silver tape on the right hand side of the diskette.

7. Place your install diskette in drive A and close the door.

8. Type *Install* after the A> and press Return.

Note: as you are going through the installation, make sure that you read each of the screens carefully as this will help you to understand what choices you are making.

9. Read the first screen and then press Return again.

10. Remove the install diskette from drive A and replace it with the Master Library diskette. Close the door and press Return.

11. Remove the Master Library diskette from drive A and replace it with the Program diskette. Close the door and press Return once as we will use the driver set LOTUS.

12. Press Return again as we will be using First-Time installation and it is already highlighted.

13. Read the screen carefully and press Return.

14. Your computer can display graphs so select Yes and press Return.

15. You have one monitor so select One and press Return.

16. We do not wish graphs and text together so select No

and press Return.

17. We have an IBM color card, color monitor so select this and press Return.

18. We have a text printer so select Yes and press Return.

19. Your text printer is an IBM so select this and press Return.

20. Now select Proprinter or Proprinter XL and press Return.

21. You only have one text printer so select No and press Return.

22. You want to print graphs so select Yes and press Return.

23. Your graphics printer is an IBM so select this and press Return.

24. Now select Proprinter and press Return.

25. You only have one graphics printer so select No and press Return.

26. We will not be using communications during this course so select No and press Return.

27. We do not want to name our driver set so select No and press Return. Your driver set will automatically be named LOTUS.

28. Read the screen and press Return.

29. Remove your Program diskette from drive A and replace it with the Master Library diskette. Close the door and press Return.

30. Remove your Master Library diskette from drive A and

replace it with the Program diskette. Close the door and press Return.

31. We will be using PrintGraph during this course so remove the Program diskette from drive A and replace it with the PrintGraph diskette. Close the door and press Return.

32. To check the contents of your driver set LOTUS, press F10.

33. Now press Escape.

34. We wish to leave the install program so press Return.

35. Select Yes and press Return. Note: the A> will reappear on the screen.

36. Make sure to replace the write protect tab on to the Program diskette.

You have now installed your Symphony system to the equipment you will be using.

LESSON 4 - INTRODUCTION TO WORD PROCESSING

Objectives:

1. To enter the word processing (DOC) environment of SYMPHONY via DOS.
2. To format two work diskettes.
3. To type, print and save a short letter.
4. To exit from SYMPHONY, ACCESS, return to DOS (A>) and shut off the computer.

Points to Remember:

1. The most important keyboard key is the ENTER or RETURN

key. These terms are interchangeable. Some texts prefer one over the other. The documentation which accompanies SYMPHONY uses RETURN and hence this term will be used throughout the current text.

2. It is very important to remember that each time you command the computer to perform a task, you must wait for the red lights to turn off and the screen to return to normal position before issuing a second command.

3. When following the various commands within the MENU of SYMPHONY (eg. Copy, Move, Erase etc.) it is inevitable that errors will be made. The ESCAPE key allows the user to cancel out the step most recently carried out. It is then possible to redo the command correctly and continue.

4. To select TYPE (Alt and F10), you must first press and hold the Alt key and then press F10.

A) Entering the Symphony System

1. To enter the Symphony System you first have to enter the DOS (Disk Operating System) as you practiced in Lesson 2.

2. Insert IBM DOS diskette in drive A and close the door.

3. Turn the monitor and the computer on.

4. Enter the DATE, if necessary, in the form MM-DD-YY and press Return.

Note: some computers will provide the date automatically.

5. Enter the TIME, if necessary, in the form HH-MM using the 2400 hour clock system and press Return. Note: some computers will provide the time automatically.

6. The A> will appear. You are now entered into DOS.

7. Before we continue, we will need to format 2 diskettes to use during our course.

8. With your DOS diskette in drive A, type in *format b:* after the A> and then press Return.

9. Insert a new diskette in drive B and press Return when ready. (there are 39 tracks to a diskette so wait until the screen displays FORMAT COMPLETE)

10. Then the computer will ask if you want to format another diskette. We will need another diskette later in the course so type *Y* for Yes in order to format another diskette at this time. Make sure you remember which 2 diskettes are formatted.

11. Once you have formatted your diskettes, the A> will appear.

12. Remove the DOS diskette from drive A and place back in its cover. Insert SYMPHONY PROGRAM DISKETTE in drive A and close the door.

13. Type in *ACCESS* after the A> and press Return. The control panel will display the SYMPHONY Access System menu:

Symphony - will allow you to enter the SYMPHONY Program

Tutorial - will allow you to enter the SYMPHONY Tutorial which directs you through exercises that explain how to use SYMPHONY

PrintGraph - will allow you to enter the PrintGraph Program for printing graph files

Install - will allow you to run the Install Program

which prepares your SYMPHONY diskettes so they work on your computer system (you can also start the Install Program from the A> by typing *Install* and pressing Return)

File-Translate- will allow you to enter the Translate Utility that enables you to exchange data files between SYMPHONY and other programs

Exit - will allow you to Exit from the SYMPHONY Access System and return to the A>

14. With the SYMPHONY PROGRAM DISKETTE still in drive A, and the menu pointer already highlighting SYMPHONY, press Return as we wish to enter the SYMPHONY Program.

15. Remove SYMPHONY PROGRAM DISKETTE from drive A and place in its cover.

16. Insert SYMPHONY HELP & TUTORIAL DISKETTE in drive A and close the door.

17. Insert your FORMATTED DISKETTE in drive B and close the door.

18. Press Return. You are now ready to start SYMPHONY.

B) Entering the Word Processing (DOC) Environment

1. The Spreadsheet environment will be displayed (SHEET) in the top right hand corner, however, we wish to start with the Word Processing (DOC) environment first so this will require us to change to the DOC environment.

2. To do this, press the Alt key first and hold it down while you also press the F10 key (TYPE). The control panel at the top of the screen will display the MENU:

SHEET - indicates the spreadsheet work environment

DOC - indicates the word processing work environment

GRAPH - indicates the graphics work environment

FORM - indicates the forms management (database) work environment

COMM - indicates the communications work environment

3. Move the cursor with the right pointer movement key and select the DOC environment.

4. Press Return and you should now be in the Word Processing or DOC environment and this will be indicated at the top right hand corner of the screen.

You are now ready to begin Word Processing!!!

C) Explanation of the DOC Environment

1. Locate each of the following in the unique display format of the DOC environment above.

TOP LINE or CONTROL PANEL

CURSOR - a single-character symbol. Whatever you type appears on the screen at this cursor position. Notice that it blinks.

CURSOR POSITION INDICATORS - indicate the position of the cursor by line and character. The cell number refers to your location in the worksheet.

JUSTIFICATION- (left) indicates that the beginning of each line you type will start against the left margin and extend as close to the right margin as possible, but not beyond. This setting may be changed.

LINE SPACING- (single) indicates that when you print your

document, it will be single spaced. This setting may be changed.

INDICATOR- indicates which environment you are presently in; SHEET, DOC, GRAPH, FORM, or COMM. This setting may be changed.

ASTERISK (*)- this symbol appears when the cursor is positioned on something that cannot be edited with the word processor.

TOP BORDER

ARROWHEADS - indicate the current tabs. Each tab position is 5 spaces apart. These settings may be changed.

DOUBLE ARROWS - indicate the current margin positions. The left margin is set at 1 and the right margin is set at 72. These settings may be changed.

NOTE: Calc indicator key on the bottom line will sometimes appear. Unless you have incorporated spreadsheet data in a document, you can ignore it.

2. We will introduce each of the DOC environment commands as we need them. To indicate the menu of the DOC environment, press MENU or F10. In the menu are the following commands:

Copy command - will allow you to copy text and format lines within a document

Move command - will allow you to move text or format lines from one location to another

Erase command - will allow you to erase a specified block of text

Search command - will aid you in locating a specified string of text

Replace command - will allow you to replace one text string with another specified text string

Justify command - will allow you to rejustify text within a document

Format command - will allow you to create or edit a format line

Page command - will allow you to insert an unconditional page break anywhere within the document

Line-Marker command- will assign a name to a text line or format line within the document

Quit command - will return you to normal position to continue working on your lesson

D) Creating a Letter

You begin word processing by starting to type. You use the letter and number keys on your keyboard and as you type, the cursor will move across the screen. Remember: The position of the cursor in the document is indicated in the control panel.

HOME position is Line 1 Char 1 and if you do not wish to begin in this position, you can use your pointer keys or movement keys to begin in the appropriate position. In this lesson we will be starting in HOME position.

NOTE: you should SAVE your work frequently as you type a document. We will learn how to Save Our Work in this lesson.

When you come near the end of the sentence, you do not need to press return to go to the next line. SYMPHONY has the special WORD WRAP feature and automatically moves the cursor to the beginning of the next line. If you are in the middle of the word, it will move the whole word so keep typing.

The three cases in which you might want to use RETURN is to end a paragraph, you are at the end of a short line, or you want to leave a blank line between sections of text.

We shall type the following letter to get used to creating a document in this environment. The instructions follow this letter.

Mary Jones
712 Arch Street
Four Hills, Alberta, Canada
T6H 0G5

Dear Mary:

It was a pleasure to have you as a participant in our Racquetball Sport Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our success.

By the way Mary, I note that your birthday is rapidly approaching. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to this years program. Best wishes and Happy Birthday, Mary.

Sincerely,

Janet Smith
Camp Director

1. Press TYPE (Alt & F10).

2. Select DOC and press Return.

3. Start typing from the home position which is Line 1, Char 1.

4. Type *Mary Jones* and press Return.

5. Type *712 Arch Street* on line 2, char 1 and press Return.

6. Type *Four Hills, Alberta, Canada* on line 3, char 1 and press Return.

7. Type *T6H 0G5* on line 4, char 1 and press Return three times.

8. Type *Dear Mary:* on line 7, char 1 and press Return twice.

9. Type the first three lines of the letter making sure to start on line 9, char 6 for the first line so it will be indented (refer to letter).

10. Press Return twice.

11. Type the next three lines of the letter making sure to start on line 13, char 6 for the first line so it will be indented (refer to letter).

12. Press Return twice.

13. Type the last three lines of the letter making sure to start on line 17, char 6 for the first line so it will be indented (refer to letter).

14. Press Return three times.

15. Type *Sincerely,* on line 22, char 1 and press Return six

times.

16. Type *Janet Smith* on line 28, char 1 and press Return once.

17. Type *Camp Director* on line 29, char 1 and press Return once.

You have now completed your first letter.

E) Saving Your Letter

NOTE: If you do not save your work before you leave SYMPHONY or start to work on another file, you will lose all your work since you entered the system.

Saving Your Work - A New Worksheet

1. Make sure you have placed a formatted diskette in drive B.
2. Press SERVICES (F9).
3. Select File and press Return.
4. Select Save and press Return.

Note: When saving for the first time B:\ will appear on the top line. This indicates that the file will be saved in drive B and then it prompts you to name the file. If other files exist on your diskette, these will be displayed on the second line from the top.

5. Press ESCAPE to clear the current drive specifier/directory and type the name you wish for your file. Note: you must not include spaces in this title and it can only be a maximum of 8 letters and/or numbers.

If you make an error in typing the name of the file, use BACKSPACE to make your corrections.

6. Type the file name (in this case *Letter1*) and press Return.

You will note that the next time you request the file that there is an extension of WR1 on your file name. This is called a *File Name Extension* and indicates the type of file (worksheet file). Other File Names include:

.APP indicates Add-in application file

.CCF indicates Communications configuration file

.CTF indicates Character code translation file

.PIC indicates Graph (picture) file

.PRN indicates Print file

.WR1 indicates Worksheet file (as mentioned above)

F) Printing Your Letter

SYMPHONY gives you choices when you print your work however, you do not have to make any changes unless you choose to. SYMPHONY has default settings which will remain unless you choose to alter them. Instructions will be explained in future lessons for Changing the Default Settings. To begin with you will practice *With the Normal or Default Settings*.

WITH DEFAULT SETTINGS

1. Make sure you still have your Letter1 on the screen as we wish to print this document.
2. Turn on your printer.
3. Adjust the paper so the printing mechanism is at the top of the new page.
4. Press SERVICES (F9).

5. Select Print and press Return.

6. Select Align to reset SYMPHONY's mechanism for counting page and line numbers. Press Return.

7. Select Go and press Return to print your work.

8. Once your printing has been completed, select Quit, press Return and your Letter1 will return to the screen.

G) Exiting from the Symphony System

At various times when using the computer you will want to exit from the SYMPHONY Program.

1. Press SERVICES (F9).

2. The screen will display the Service Menu:

Window command - will provide different views of your worksheet data

File command - will transfer information between a Symphony worksheet and a diskette

Print command - will print any information from your diskette, excluding graphs

Configuration command - will enable the user to control the Symphony default settings when beginning a work sesson

Application command - will enable the user to run special add-in application programs while operating in Symphony ie. DOS or the Symphony Tutorial

Settings command - will allow user to specify several global settings for the worksheet

New command - will allow the user to erase the

entire contents of a Symphony worksheet so there is a blank worksheet

Exit command - will allow user to exit from the Symphony work session

3. Select Exit and press Return as we wish to exit from SYMPHONY.

4. Select Yes and press Return (if you have changed your mind and do not wish to exit from SYMPHONY, you should select No instead of Yes).

H) Exiting from the Access System

Once you have exited from SYMPHONY, the screen will display the Access System, as noted previously, and you must exit from this system.

1. To exit from the Access System and return to the DOS prompt (A>), simply choose Exit and press Return. The screen will immediately return you to the A>.

2. Remove the diskettes from the disk drives and return them to their protective covers.

3. Make sure to turn off your monitor and computer once you have completed your tasks for each session.

LESSON #4 OUTCOME:

Mary Jones
712 Arch Street
Four Hills, Alberta, Canada
T6H 0G5

Dear Mary:

It was a pleasure to have you as a participant in our Racquetball Sport Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our success.

By the way Mary, I note that your birthday is rapidly approaching. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to this years program. Best wishes and Happy Birthday, Mary.

Sincerely,

Janet Smith
Camp Director

LESSON 5 - INTERMEDIATE TASKS FOR WORD PROCESSING

Objectives:

1. To type, print and save a two page lesson plan.

2. To introduce the underlining, page breaking, highlighting, copying text and inserting features of the word processing (DOC) environment of SYMPHONY.

Points to Remember:

1. In this and subsequent lessons, some operations which were introduced in previous lessons will be reused. In these instances, the user will be referred to the appropriate Appendices.

2. If, at any time one document (eg. a letter) is completed, printed and saved and you wish to immediately start work on a new document (eg. a second letter) you must

create a new worksheet. Refer to Appendix (F): Changing to a New or Blank Worksheet.

3. When following the various commands within the MENU of SYMPHONY (eg. Copy, Move, Erase etc.) it is inevitable that errors will be made. The ESCAPE key allows the user to cancel out the step most recently carried out. It is then possible to redo the command correctly and continue.

4. To select TYPE (Alt and F10), you must first press and hold the Alt key and then press F10.

A) Re-Entering the Symphony System

In order to begin this lesson we must once again enter the Word Processing or DOC environment of SYMPHONY. To do this, we must first enter the SYMPHONY system. Refer to *Entering the Symphony System* in Lesson 4, Section A. However, because we have already formatted our diskettes, steps 7,8,9,10, and 11 may be eliminated.

B) Re-Entering the Word Processing (DOC) Environment

Once we have entered the SYMPHONY system, we must re-enter the Word Processing (DOC) environment. Refer back to Lesson 4, Section B: *Entering the Word Processing (DOC) Environment*.

C) Creating a Lesson Plan

Another example to practice word processing techniques is to devise a lesson plan. In this session you will learn how to underline and highlight headings, page break, highlight your work, copy a block of text from one area to another and insert a blank line.

Follow the directions to create the following lesson plans.

Start typing from the home position which is Line 1, Char 1. Do the typing of page #1 without worrying about underlining the headings. However, include the proper indentations using your space bar and leave the proper blank lines by pressing the Return key.

This is page number 1:

RACQUETBALL SPORT CAMP LESSON #1

Basic Fundamentals and Forehand Stroke & Drills

Fundamentals

1. Watch the ball at all times.
2. Maintain and regain center court.
3. Use an open stance.
4. Keep the ball out of center court.
5. Play the ball to proper length.
6. Put the ball where your opponent isn't.
7. Vary your shots.
8. Play to your opponent's weakness.

Forehand Stroke and Drills

Stroke

1. The GRIP - Eastern backhand.
2. Footwork - open stance facing the sidewall.
3. Early Racquet Preparation - racquet up.
4. Sidearm Swing.
5. Weight Transfer - back foot to front foot.
6. Body Rotation - pivot hips and shoulders.
7. Contact Point - off front foot, waist level or lower.
8. The Wrist - cocked and then snapped.
9. Perpendicular Racquet in Contact Area.
10. Follow-through.

Drills

1. Drop and hit.
2. Partner throw ball to front wall and other partner set up and hit; then switch.
3. Drop and hit in front, middle and back court.

Once you have finished typing page #1, we will now learn how

to underline your headings.

UNDERLINING HEADINGS (type styles)

1. Move the cursor, using the pointer movement keys, to the beginning of the text you wish to underline.

2. Hold down the CONTROL key (Ctrl) and type the letter *b* to *begin the print attribute*. SYMPHONY will display a triangle when you do this. Release the Ctrl key.

3. Type the letter *u*, which indicates you will be underlining the words only. Refer to Appendix (G) for more *Special Print Attributes and Codes*.

4. Now move the cursor to one space beyond the last letter of the text you are underlining.

5. Hold down the CONTROL key (Ctrl) and type the letter e to *end the print attribute*. SYMPHONY will display an upsidedown triangle when you do this.

6. Press Return to complete the line.

Repeat these steps for any other headings you wish to underline. Note: in a long line, entering a *Print Attribute Code* will push the text beyond the right margin. The codes, however, do not take up spaces when you print your work. The right margin remains aligned.

PAGE BREAK

Now that you have underlined your first 2 lines of page one, you will learn how to page break.

We will use the end of Lesson #1 as our page break for this work session.

1. Position your cursor two lines below the last line of

your text in Lesson #1.

2. Press MENU (F10).

3. Select Page and press Return.

Note: SYMPHONY will mark the page break with the symbol :: and when you print your work, it will not appear on your document. If you make a mistake and page break in the wrong place, you must use ERASE (in the MENU command) or the Erase command (F4).

COPYING TEXT FROM ONE AREA TO ANOTHER

We will now learn how to copy a block of text from one area to another. So far we have only typed the first page of our 2 page lessons. You have also inserted your page break, so begin to type on the next line, the start of page #2 of lessons. Page 2 is shown below.

However, only type the first 3 lines ending with 'Backhand Stroke and Drills'. Also underline your headings as in Lesson #1 - the first two lines.

The next block of text for the lessons is exactly the same as what is used for the 'Forehand Stroke and Drills' so instead of typing it again, we will go back to that text on page #1.

1. Move your cursor to the line starting with 'Stroke' on page #1. (make sure cursor is on Character 1 of that line)

2. Press MENU (F10).

3. Select Copy and press Return.

4. SYMPHONY will ask you to copy from what block?

5. Use your down pointer-movement key to highlight the next

line and continue until you have highlighted exactly what you want to copy. In our example, you will highlight to the end of the 'Drills' section, making sure you do not highlight your page break. (Refer to Appendix (H) - Highlighting Your Work)

6. Once you have done this, press Return.

7. SYMPHONY now asks you where you want to copy to?

8. Move your cursor to character 1, two lines below your line "Backhand Stroke and Drills" and press Return.

9. The cursor will return to the original position where you initially started the Copy command, so press PgDn to make sure your text was copied properly.

Note: If your copied text is incorrect as far as alignment, use 'Justifying a Paragraph' in the next section.

This is page number 2:

RACQUETBALL SPORT CAMP LESSON #2

Backhand Stroke and Drills; Review; Explain Rules

Backhand Stroke and Drills

Stroke
1. The GRIP - Eastern backhand.
2. Footwork - open stance facing the sidewall.
3. Early Racquet Preparation - racquet up.
4. Sidearm Swing.
5. Weight Transfer - back foot to front foot.
6. Body Rotation - pivot hips and shoulders.
7. Contact Point - off front foot, waist level or lower.
8. The Wrist - cocked and then snapped.
9. Perpendicular Racquet in Contact Area.
10. Follow-through.

Drills
1. Drop and hit.
2. Partner throw ball to front wall and other partner set up and hit; then switch.

3. Drop and hit in front, middle, and back court.

Review
1. Forehand and Backhand Technique.
2. Emphasize the Fundamentals again.
3. Do the drills again but in combination; forehand and backhand.
4. Have the students rally back and forth switching sides.

Explain the Rules of a Game of Racquetball.

INSERTING A BLANK LINE

We will now learn how to insert a blank line.

1. Move your cursor to the beginning of the line that reads, "Basic Fundamentals and Forehand Stroke & Drills" . Make sure you are located on Character 1 of that line.

2. Press Return and you will see a blank line appear.

Note: your cursor will move the line that it is located on down one line and your blank line will end up directly above the cursor position.

You still have not finished your lesson #2 so type the rest of the lesson and when you have finished, insert another page break at the end of lesson #2. Refer to Page Break section.

D) Saving Your Lesson Plan

Note: If you do not save your lessons before you leave SYMPHONY or start to work on another file, you will lose all your work since you entered the system. Therefore, refer to Lesson 4, Section E: *Saving Your Work - A New Worksheet*. However, name your new file *Lesson* not Letter1 as in lesson 4.

E) Printing Your Lesson Plan - Changing the Default

Settings- the Page Numbers

In Lesson 4 we printed our letter using the default settings that SYMPHONY supplies. However, in this lesson we wish to change the default settings to indicate printing the second page only.

1. Turn on your printer.
2. Adjust the paper so the printing mechanism is at the top of the new page.
3. Press SERVICES (F9).
4. Select Print and press Return.
5. Select Settings and press Return.
6. Select Page and press Return.
7. Select Number and press Return.
8. Select Start-Page and press Return.
9. Type in 2 as you wish to print only page number 2. Press Return.
10. Select Number again and press Return.
11. Select End-Page and press Return.
12. Type in 2 again as you wish to end printing on page 2. Press Return.
13. Select Quit and press Return.
14. Select Quit again and press Return.
15. Select Align to reset SYMPHONY's mechanism for counting page and line numbers. Press Return.
16. Select Go and press Return to print your page 2.
17. Once your printing has been completed, select Quit, press Return and your file will return to the screen.

Note: if you want to print both of your lessons, repeat this procedure only remember to change the start-page to 1 instead of 2. The end-page can remain at 2.

F) Exiting from the Symphony System

When you have completed your Lessons and want to exit from SYMPHONY, refer to Lesson 4, Section G: *Exiting from the Symphony System.*

G) Exiting from the Access System

To complete your Exit process, you must exit from the Access System. Refer to Lesson 4, Section H: *Exiting from the Access System.*

LESSON #5 OUTCOME:

RACQUETBALL SPORT CAMP LESSON #1

Basic Fundamentals and Forehand Stroke & Drills

Fundamentals

1. Watch the ball at all times.
2. Maintain and regain center court.
3. Use an open stance.
4. Keep the ball out of center court.
5. Play the ball to proper length.
6. Put the ball where your opponent isn't.
7. Vary your shots.
8. Play to your opponent's weakness.

Forehand Stroke and Drills

Stroke

1. The GRIP - Eastern backhand.
2. Footwork - open stance facing the sidewall.
3. Early Racquet Preparation - racquet up.
4. Sidearm Swing.
5. Weight Transfer - back foot to front foot.
6. Body Rotation - pivot hips and shoulders.
7. Contact Point - off front foot, waist level or lower.
8. The Wrist - cocked and then snapped.

9. Perpendicular Racquet in Contact Area.
10. Follow-through.

Drills
1. Drop and hit.
2. Partner throw ball to front wall and other partner set up and hit; then switch.
3. Drop and hit in front, middle and back court.

RACQUETBALL SPORT CAMP LESSON #2

Backhand Stroke and Drills; Review; Explain Rules

Backhand Stroke and Drills

Stroke
1. The GRIP - Eastern backhand.
2. Footwork - open stance facing the sidewall.
3. Early Racquet Preparation - racquet up.
4. Sidearm Swing.
5. Weight Transfer - back foot to front foot.
6. Body Rotation - pivot hips and shoulders.
7. Contact Point - off front foot, waist level or lower.
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9. Perpendicular Racquet in Contact Area.
10. Follow-through.

Drills
1. Drop and hit.
2. Partner throw ball to front wall and other partner set up and hit; then switch.
3. Drop and hit in front, middle, and back court.

Review
1. Forehand and Backhand Technique.
2. Emphasize the Fundamentals again.
3. Do the drills again but in combination; forehand and backhand.
4. Have the students rally back and forth switching sides.

Explain the Rules of a Game of Racquetball.

LESSON 6 - ADDITIONAL INTERMEDIATE TASKS FOR WORD PROCESSING

Objectives:

1. To type, save and print a two page paper.

2. To introduce the moving and erasing a block of text, justifying a paragraph and deleting a blank line features of

the DOC environment of SYMPHONY.

Points to Remember:

1. In this and subsequent lessons, some operations which were introduced in previous lessons will be reused. In these instances, the user will be referred to the appropriate Appendices.

2. If, at any time one document (eg. a letter) is completed, printed and saved and you wish to immediately start work on a new document (eg. a second letter) you must create a new worksheet. Refer to Appendix (F) : Changing to a New or Blank Worksheet.

3. When following the various commands within the MENU of SYMPHONY (eg. Copy, Move, Erase etc.) it is inevitable that errors will be made. The ESCAPE key allows the user to cancel out the step most recently carried out. It is then possible to redo the command correctly and continue.

4. To select TYPE (Alt and F10), you must first press and hold the Alt key and then press F10.

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Lesson 4, Section A: *Entering the Symphony System* or refer to Appendix (A): *Entering the Symphony System*. However, because we have already formatted our diskettes, steps 7 through 11 may be eliminated.

B) Re-Entering the Word Processing (DOC) Environment

To re-enter the Word Processing (DOC) environment, refer to Lesson 4, Section B: *Entering the Word Processing (DOC)*

Environment.

C) Typing a Paper

Our last example to practice word processing techniques is to devise a paper. In this session you will learn how to underline and highlight headings, insert a blank line, and page break again. As well you will learn how to move a block of text, erase a block of text, justify a paragraph, and delete a blank line.

Follow the directions to create a paper. You should be located in the DOC environment.

1. Start typing from the home position which is Line 1, Char 1.

Type the whole paper without worrying about anything except the proper indentations and the proper spelling.

This is your paper:

COMPUTERS IN PHYSICAL EDUCATION

The use of computers in all aspects of society has grown rapidly in recent years!! This trend has spread to Sport and Physical Education, albeit somewhat slowly. There is no doubt that extensive use of computers has been made in certain research areas such as biomechanics, psychology and to a lesser extent measurement and evaluation of fitness and other components of sports performance. More recently video laserdiscs, controlled by personal computers, have penetrated the area of Physical Education. However, the use of both main frame and personal computers in somewhat specific research applications in sport and physical education has not been matched in the administrative applications for which they are so suited. In 1966, at the University of Alberta, a computer program was developed to assign some 4,000 students to required Physical Education classes each semester. The assignment was based on the student's preferred choice of course/activity; available time slots in the student's weekly schedule; the timetable of courses available in various activities and the quota of students permitted in each class section. However, such examples of the use of computers to solve administrative

problems have been the exception rather than the rule.

In the early development of the use of computers a knowledge of programming was essential. Initially, these languages were 'machine' level and involved step by step programming of the particular computer, using instructions which were complex and not particularly meaningful to the user. Somewhat later, "symbolic" languages were developed which helped to 'interpret' symbols which were meaningful to the programmer into information which could be understood by the computer. Still later, specialized languages, such as Fortran and Cobol, were introduced which met particular requirements, namely scientific and engineering, in the case of Fortran and business applications, in the case of Cobol. This made it possible to incorporate certain functions into the language. For example, it became possible to generate the logarithm of a given number using one instruction whereas, even symbolic languages required in excess of 50 individual instructions to generate the same value. Cobol, on the other hand, greatly facilitated the preparation of business reports.

Potential sports administrators require an introduction to computer literacy which both encourages them to make immediate use of computer technology but which also serves as a base for keeping abreast with the rapid developments which will occur in the future. Where does the answer lie? It lies in 'pre-written' general programs which are flexible and permit customization to meet specific needs. Such programs involve software dedicated to word processing, to handling data through spreadsheets, to database management, or to graphical representation of data.

Now go back to your title and underline the heading referring back to the section on UNDERLINING HEADINGS in the previous lesson 5.

Insert a page break where you wish by referring back to the section on PAGE BREAK in the previous lesson 5.

D) Saving Your Paper

Also make sure to save your work. Refer to Appendix (D): *Saving Your Work - A New Worksheet* so you do not lose what you have typed. Note: we will name this file, *Paper*.

Before we continue, we will save a second copy of our Paper and assign it a New Name- *Paper2*. This will be the

copy that we will now do our lesson with. Refer to Appendix (D) : *Saving Your Work- A New Worksheet*.

E) Working on a Paper

MOVING A BLOCK OF TEXT

We will now learn how to move a block of text from one area to another area in the document.

1. Move your cursor to the beginning of the block of text you are going to move. We will be moving the second paragraph of our paper, so move the cursor to character 1 of the line starting with... In the early development....
2. Press MENU (F10).
3. Select Move and press Return.
4. Symphony will ask you what block you want to move from so therefore, highlight to the beginning of the last line of your paragraph by using the down arrow key until you have highlighted the entire second paragraph.
5. Press Return.
6. Symphony will ask you where you wish to move the block TO?
7. Move the cursor to character 1 on the first line of paragraph one.
8. Press Return. You will notice that the cursor will return to the position that you started your Move command from.

Note: If your moved text is incorrect as far as alignment, use 'Justifying a Paragraph' located in this section to fix it.

ERASING A BLOCK OF TEXT

Now we will learn how to erase a block of text. In deleting characters, we use the commands DELETE or BACKSPACE. However, to erase a block of text we use either ERASE or the Erase command.

Using the Erase Command

1. We wish to erase paragraph two so move your cursor to the beginning of the first line of paragraph two.
2. Press MENU (F10).
3. Select Erase and press Return.
4. Symphony asks you which block of text you wish to erase so highlight paragraph two as you did for moving a block of text. (refer to the previous section - MOVING A BLOCK OF TEXT).
5. Press Return and Symphony will erase the text.

Using ERASE

1. Move the cursor to the beginning of the second paragraph. Make sure you are located on character 1 of that line.
2. Press ERASE (F4).
3. Symphony asks you which block of text you wish to erase so highlight the entire paragraph as you did for moving a block of text. (refer to the previous section - MOVING A BLOCK OF TEXT).
4. Press Return and Symphony will erase the text.

Note: For each of these, if the lines you erased have altered the text so it is not aligned, follow the steps to

'Rejustify' the text.

JUSTIFYING A PARAGRAPH

Now we will learn how to rejustify a paragraph. There are two ways to rejustify text: either use JUSTIFY or the Justify command. JUSTIFY only rejustifies the paragraph where the cursor is located. The Justify command will rejustify your paragraph where your cursor is located and as well will give you the option of rejusifying all of your text from the location of the cursor to the end of your document.

Using the Justify Command

1. Move the cursor anywhere in the remaining paragraph and type in some extra words.
2. The paragraph will not be aligned properly so you will want to 'rejustify' it.
3. Press MENU (F10).
4. Select Justify and press Return.
5. Notice that you must select one of the options listed:

   Paragraph - Rejustifies the paragraph.

   All-Remaining - Rejustifies paragraph and all the text from the cursor to the end of the document.

6. Select Paragraph as we are only rejustifying the paragraph.
7. Press Return and Symphony rejustifies your paragraph.

Using JUSTIFY

1. Move the cursor again to anywhere in the remaining paragraph and type in some extra words.

2. The paragraph will not be aligned properly so you will want to 'rejustify' it.

3. Press JUSTIFY (F2).

4. Symphony will rejustify your paragraph for you.

DELETING A BLANK LINE

Now we will learn how to delete a blank line.

1. Move the cursor to the beginning of the blank line located under the title. Make sure your cursor is located at the left margin: Line 2, Char 1, Cell A2.

2. Press DELETE and you will notice that your blank line disappears and moves the rest of the text towards your cursor position.

F) Printing Your Paper

Symphony gives you choices when you print your work however, you do not have to make any changes unless you choose to. Symphony has default settings which will remain unless you choose to alter them. Refer to Appendix (I): *Printing Your Work- Changing the Default Settings*. Make sure that your start-page is 1 and the end-page is 999 (999 is used to indicate to the printer to print to the last page of the document).

G) Exiting from the Symphony System

If you have completed your lesson for the day, to exit from the SYMPHONY System refer to Lesson 4, Section G: *Exiting from the Symphony System* or refer to Appendix (B) : *Exiting from the Symphony System*.

H) Exiting from the Access System

To complete your exit, refer to Lesson 4, Section H: *Exiting from the Access System* or refer to Appendix (C) : *Exiting from the Access System.*

LESSON #6 OUTCOME:

In the early development of the use of computers a knowledge of programming was essential. Initially, these languages were 'machine' level and involved step by step programming of the particular computer, using instructions which were complex and not particularly meaningful to the user. Somewhat later, "symbolic" languages were developed which helped to 'interpret' symbols which were meaningful to the programmer into information which could be understood by the computer. Still later, specialized languages, such as Fortran and Cobol, were introduced which met particular requirements, namely scientific and engineering, in the case of Fortran and business applications, in the case of Cobol. This made it possible to incorporate certain functions into the language. For example, it became possible to generate the logarithm of a given number using one instruction whereas, even symbolic languages required in excess of 50 individual instructions to generate the same value. Cobol, on the other hand, greatly facilitated the preparation of business reports.

LESSON 7 - ADVANCED TASKS FOR WORD PROCESSING

Objectives:

1. To introduce the user to several advanced functions of SYMPHONY which are commonly used in Word Processing.

2. To print and save the revised two page paper.

Points to Remember:

1. This lesson is optional and may be omitted without affecting the continuity of the lessons which follow.

WORD PROCESSING PROBLEM

You have now completed the word processing section. This assignment will be to retrieve your file, Paper, and make four alterations.

1. The first alteration is that you want to add a quote

into the paper that is separated from the rest of the text. The quote should begin after the first sentence of the last paragraph and before the sentence "Where does the answer lie?".

> It should read, *As quoted by Haggerty;*
> *"Currently, most microcomputer applications do not change the way one manages, but rather assist a person to manage in a more efficient and perhaps more effective way."*

2. The second alteration is that when you print this paper, you want it double-spaced except for this quote. You will have to format the document.

3. The third alteration is that you wish to format the quote so that when you print the document, the quote will remain single-spaced and indented from the rest of the text.

4. The last alteration is that when you print this paper, you want to include a footer that indicates the page numbers on the bottom, right side of the pages (ie. page 1, page 2).

WORD PROCESSING SOLUTION

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Appendix (A): *Entering the Symphony System.* However, because we have already formatted our diskettes, steps 7 through 11 may be eliminated.

B) Retrieving Your File

We wish to retrieve our file Paper. Refer to Appendix (E) : *Retrieving Your File.*

C) Adding a Quote

1. Move your cursor to the last paragraph and position it at the start of the second sentence in that paragraph that begins with *Where does...*

2. Make sure that your insert key is off and type *As quoted by Haggerty:*. Press Return.

3. Now type the rest of the quote not worrying about positioning or indenting the text. Just do the typing.

"Currently, most microcomputer applications do not change the way one manages, but rather assist a person to manage in a more efficient and perhaps more effective way."

4. Press Return after you have finished typing the quote.

5. To rejustify the rest of the text, press F2.

D) Formatting the Document

Now we will make alterations in order that we can print our document double-spaced except for the quote we have just added. We will need to format our document first.

1. Press MENU (F10).

2. Select Format and press Return.

3. Select Settings and press Return.

4. Select Spacing and press Return.

5. We wish our document to be double-spaced when printed so select 2 and press Return.

6. Select Quit and press Return.

Note: In the top control panel, your spacing now indicates Left, Double. This means the document is aligned on the left margin and will be double-spaced.

E) Formatting and Indenting a Quote

To format your quote so when the document is printed

double-spaced but your quote remains single-spaced and indented, follow these directions;

1. Move your cursor to the very beginning of the quote, "*Currently,....*

2. Press MENU (F10).

3. Select Format and press Return.

4. Select Create and press Return.

5. Press TAB and highlight the three lines of the quote by pressing the down arrow key.

6. Press Return and notice the format lines that appear.

   L - represents the left margin

   T - represents the tab intervals of 5

   R - represents the right margin

   2 - represents that the quote will be double-spaced

7. Select Margins/Tabs and press Return.

8. Move your cursor to the L on the first format line.

9. Press the space bar five times and notice that L on the format line moves over.

10. Move your cursor to the R on the same format line.

11. Press your BACKSPACE key 12 times and notice that the R on the format line moves inward.

12. Press Return.

13. Select Spacing and press Return.

14. Select 1 as we wish our quote to be single-spaced. Press Return.

15. Select Quit and press Return.

16. Now move your cursor to the beginning of the line that

begins with "Where does the answer lie?". Press Return once so there will be a blank line between this line and the quote when you print.

Note: If you make a mistake when you are formatting your quote, to erase the format lines and start again, move your cursor to the format line, press F10, select Erase and press Return. Your format line will disappear and you can start again. However, make sure to erase both format lines.

F) Adding a Footer

And, lastly, we will add a footer to our print menu so our page numbers will appear on the bottom, right corner.

Note: footers are located at the bottom of the page. Headers can also be made that appear at the top of the page.

1. Press SERVICES (F9).
2. Select Print and press Return.
3. Select Settings and press Return.
4. Select Page and press Return.
5. Select Footer and press Return.
6. Type ¦¦page # and press Return. This will position the page numbers on the bottom, right side of each page. ¦ is used to separate and position the text in headers or footers.

Other examples of *Special Characters* to use for headers or footers can be found in Appendix (K) : *Special Characters for Headers and Footers*.

7. Select Quit and press Return.
8. Select Quit again and press Return.

9. If at this time you wish to print your altered document, turn on your printer and align the paper.

10. Select Align and press Return.

11. Select Go and press Return.

12. When printing is completed, select Quit and press Return.

Make sure that you save this lesson. Refer to Appendix (D) : Saving Your Work - Saving a Worksheet Again - Under the Same Name.

G) Exiting from the Symphony System

If you have completed your lesson for the day, refer to Appendix (B) : *Exiting from the Symphony System.*

H) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #7 OUTCOME:

COMPUTERS IN PHYSICAL EDUCATION

The use of computers in all aspects of society has grown rapidly in recent years!! This trend has spread to Sport and Physical Education, albeit somewhat slowly. There is no doubt that extensive use of computers has been made in certain research areas such as biomechanics, psychology and to a lesser extent measurement and evaluation of fitness and other components of sports performance. More recently video laserdiscs, controlled by personal computers, have penetrated the area of Physical Education. However, the use of both main frame and personal computers in somewhat specific research applications in sport and physical education has not been matched in the administrative

applications for which they are so well suited. In 1968, at the University of Alberta, a computer program was developed to assign some 4,000 students to required Physical Education classes each semester. The assignment was based on the student's preferred choice of course/activity; available time slots in the student's weekly schedule; the timetable of courses available in various activities and the quota of students permitted in each class section. However, such examples of the use of computers to solve administrative problems have been the exception rather than the rule.

In the early development of the use of computers a knowledge of programming was essential. Initially, these languages were 'machine' level and involved step by step programming of the particular computer, using instructions which were complex and not particularly meaningful to the user. Somewhat later, "symbolic" languages were developed which helped to 'interpret' symbols which were meaningful to the programmer into information which could be understood by the computer. Still

later, specialized languages, such as Fortran and Cobol, were introduced which met particular requirements, namely scientific and engineering, in the case of Fortran and business applications, in the case of Cobol. This made it possible to incorporate certain functions into the language. For example, it became possible to generate the logarithm of a given number using one instruction whereas, even symbolic languages required in excess of 50 individual instructions to generate the same value. Cobol, on the other hand, greatly facilitated the preparation of business reports.

Potential sports administrators require an introduction to computer literacy which both encourages them to make immediate use of computer technology but which also serves as a base for keeping abreast with the rapid developments which will occur in the future. As quoted by Haggerty:

> "Currently, most microcomputer applications do not change the way one manages, but rather assist a person to manage in a more efficient and perhaps more effective way."

Where does the answer lie? It lies in 'pre-written' general programs which are flexible and permit customization to meet specific needs. Such programs involve software dedicated to word processing, to handling data through spreadsheets, to database management, or to graphical representation of data.

LESSON 8 - INTRODUCTION TO DATABASE MANAGEMENT

Objectives:

1. To design, generate and insert data into a database.
2. To sort and save the database.
3. To print a mailing list from the database.

Points to Remember:

1. In Lesson 1 we learned that a database is an "electronic" version of an index card file. As such, it can contain fields such as name, address, postal code, birthdate or any other pertinent data.
2. Prior planning is the most important prerequisite in creating a database. Time spent in deciding, with precision, the fields to be included in a database can save the many, many hours of "corrective surgery" which are required to add a new field after a large amount of data has been entered.
3. In this lesson we will be creating a small database which includes fields for *first name, last name, address, city, province, postal code, birthdate and sex*. We will arbitrarily limit our database to these eight fields, but any number of others could be included.
4. Designing and entering data requires the use of two environments of SYMPHONY, namely the spreadsheet (or SHEET) environment and the database (or FORM) environment. The SHEET environment is used to design the database and the FORM environment is used to generate the database form as well as to enter the data.
5. When designing a database, the first part of the database

form is the *field name*, the second is the *field type*, and the third is the maximum number of *characters (or length) of the field*. For example, *First Name:L:6* indicates that the field is a label (ie. contains letters) and has a maximum length of 6 characters. Similarly, *Birthdate:D:10* indicates that the field is in date format and has a maximum length of 10.

Note: for further *Field Types* see Appendix (J).

6. To select TYPE (Alt and F10), you must first press and hold the Alt key and then press F10.

A) Re-Entering the Symphony System

Follow the steps given in Lesson 4, Section A: *Entering the Symphony System*. Note: this procedure is also given in Appendix (A). Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Entering the First Database Management Environment - the SHEET Environment

When you have completed *Entering the Symphony System*, the Spreadsheet (SHEET) environment will be already displayed. SHEET will be indicated in the top right hand corner.

C) Explanation of the SHEET Environment with Database

1. Locate each of the following in the unique display format of the SHEET environment.

CELL - is the intersection of a column and a row. The spreadsheets building blocks are cells.

CONTROL PANEL - The top, left hand corner indicates the address of the current cell. When you move the cell pointer from one cell to a different cell, the address changes in the

control panel accordingly. The top, right hand corner indicates the environment in which you are located. It should read SHEET for our purposes now.

CELL POINTER - is the highlighted bar that indicates where you are located presently in the spreadsheet.

COLUMNS - are designated by letters and are vertical in length.

ROWS - are designated by numbers and are horizontal in length.

2. We will introduce each of the database management commands which are available in the SHEET environment as we need them. To indicate the menu of the Database Management commands in the SHEET environment, make sure you are in the SHEET environment, press MENU (F10), and select Query and press Return. In the Query environment are the following commands:

Settings command - will allow you to create and edit one or more Database Settings sheets while in the SHEET environment

Find command - will allow you to highlight records which meet specified criteria contained in the Criterion range of the database

Extract command - will allow you to copy selected records from your database to another part of the worksheet

Unique command - is a modification of the extract command but differs in that it automatically eliminates duplicate records during record selection and copying

Delete command - will allow you to delete selected records from your database

Record-Sort command- will allow you to sort your database records while working in the SHEET environment

Parse command - will allow you to create new database records by dividing lines of text into field entries

Quit command - will allow you to Quit the Query command menu and return to the SHEET menu

D) Designing a Database Form

We will set up a database for our Racquetball Sports Camp. To create a database you will first have to design your form that you wish to use.

1. Because we are still located in the MENU environment, select Quit and press Return. You should be back in the SHEET environment.

2. Move to a blank area of the SHEET environment (cell A1).

3. Type *First Name:L:6* and press Return. Move the cursor down to the next line using the down arrow key.

4. Type *Last Name:L:8* and press Return. Move the cursor down to the next line using the down arrow key.

5. Type *Address:L:20* and press Return. Move the cursor down to the next line using the down arrow key.

6. Type *City:L:10* and press Return. Move the cursor down to the next line using the down arrow key.

7. Type *Province:L:8* and press Return. Move the cursor down

to the next line using the down arrow key.

8. Type *Postal Code:L:8* and press Return. Move the cursor down to the next line using the down arrow key.

9. Type *Birthdate:D:10* and press Return. Move the cursor down to the next line using the down arrow key.

10. Type *Sex:L:8* and press Return. Move the cursor down to the next line using the down arrow key.

Note: the format of your *Name Range* form below.

(Field Name:Field Type:Field Length)

First Name:L:8
Last Name:L:8
Address:L:20
City:L:10
Province:L:8
Postal Code:L:8
Birthdate:D:10
Sex:L:8

E) Entering the Second Database Management Environment - the FORM Environment

Once you have completed the steps for Designing a Database Form you will need to generate it. To do this you will need to enter the FORM environment.

1. To enter the FORM environment press TYPE (alt & F10).

2. Move the cursor to select FORM and press Return. FORM will be indicated in the top right hand corner of the screen. The top line will indicate *No Definition Range Defined*. Just ignore this.

F) Explanation of the FORM Environment

1. We will introduce each of the FORM environment commands as we need them. To indicate the menu of the FORM environment,

make sure you are in the FORM environment and then press MENU (F10). The environment will display the following commands:

Attach command - will allow you to specify a certain database/entry form combination

Criteria command - will allow you to enter, edit, enable, or disable selection criteria records

Initialize command - will allow you to restore the default entries to all fields in the current record

Record-Sort command- will allow you to sort the current database using the specified Sort-Key settings

Generate command - will allow you to create a simple database and entry form from a specified list of field names

Settings command - will allow you to fill in or change one or more Database Settings sheets

G) Generating the Database Form

Once you have completed the steps for Designing a Database Form you will need to generate it.

1. Because we need to return to the FORM environment, press ESCAPE. You will return to the FORM environment.
2. Press MENU (F10).
3. Select Generate and press Return.
4. Select Label as your default field type and press Return.
5. A default field length of 9 will appear. Just ignore this and press Return.

6. Type a name for the Database settings sheet : type *RSCD* or *rscd* (Racquetball Sport Camp Database) and press Return.

7. Symphony will now return you to the POINT environment.

You will need to highlight the range you entered in designing a form so move the cell pointer to the last field name you entered.(Sex:L:8)

8. Press TAB to anchor the cell pointer and press the Up pointer-movement key until it reaches the first line containing First Name:L:6. Note: you do not need to expand the highlighting to the right to cover everything.

9. Press Return and Symphony will display the form in your FORM environment.

The *Entry Range* will appear as follows:

First Name _____
Last Name _____
Address _____
City _____
Province _____
Postal Code _____
Birthdate _____
Sex _____

H) Entering Records into Your Database Form

Make sure you have completed all the steps in Designing a Form and Generating a Form before you start entering records.

Note: if at any time you make a mistake, follow directions in Editing Your Records (follows the next subsection).

1. You should now be in the FORM environment with the blank form displayed on the screen (as above).

2. Type the appropriate first name, last name, address, city, province, postal code, birthdate and sex into the first blank

form. After each line is completed, for example the First Name, you press Return to move to the next line. Note: when entering the birthdates use the format MM/DD/YY (ie. 07/15/54) and notice how it changes on the screen. The month will change to a word and the order of the day and month will reverse.

Here is your first entry to type:

Jim
Black
23 University Ave
Edmonton
Alberta
T3W 2L5
07/03/57
Male

3. Once you have typed the last line indicating the Sex, press Return and the cursor will return to the top of the form.

4. Press INSERT (ins) and the record will now be included in the database.

5. You will notice that after you press INSERT a blank form will be displayed and on the top line will be 'Inserting Record 2'. This means that you are now ready to fill in the second persons' information.

Follow these steps repeatedly until you have entered all of your individuals into the database and there is a blank form on the screen.

Here are the rest of the records for your database:

Mike
Johnson
3456-117 St
Edmonton

```
Alberta
T5R 4W3
05/24/51
Male
---------------
John
Smith
10911-34 Ave
Edmonton
Alberta
T6K 2E5
02/13/54
Male
---------------
Mary
Jones
712 Arch Street
Four Hills
Alberta
T4D 3P9
12/25/55
Female
---------------
Jenny
Mah
118 Brantford St
St. Albert
Alberta
T8L 5R6
09/10/52
Female
---------------
Sally
Jones
23 Barford Drive
Leduc
Alberta
T7Y 3D5
11/23/50
Female
---------------
```

Once you have completed the processes of designing and generating and entering records into a database, press TYPE (alt & F10). Select SHEET and press Return. The SHEET environment will display your data management ranges.

Explanation of Each Section

First Section

Name Range - indicates the field specifications you entered in the SHEET environment to create the form.

Second Section

Entry Range - indicates the form you created with the Generate command.

Third Section

Definition Range - is the switchboard that controls the transfer of entries between the form in the FORM environment and the records stored in the SHEET environment.

Fourth Section

Report Range - indicates the information and formulas Symphony needs when printing your database.

Fifth Section

Criterion Range - indicates the Criterion records that you enter when using the matching facility.

Sixth Section

Database Range - indicates all the records that comprise your database after you have entered them in the FORM environment.

I) Saving Your Database

You have now completed your database, however, you must remember to save your file. Refer to Appendix (D): *Saving Your Work - Saving A New Worksheet* so you do not lose what you have just created. Name this file, *RSCD*, which will indicate

your Racquetball Sport Camp Database.

J) Working With Your Database

MOVING THROUGH YOUR DATABASE RECORDS

In order to move through your database records, we must return to the FORM environment.

1. Press TYPE (alt and F10).
2. Select FORM and press Return.
3. Press each of the keys listed in the following table to view your records.

PAGE UP (PgUp)	- will display your previous record
PAGE DOWN (PgDn)	- will display your next record
HOME	- will display the first record in database
END	- will display the last record in database
GOTO (F5)	- will go to a particular record when you provide the record number

Note: as you move from record to record, the control panel will indicate your location in your database. For example, the control panel will display "Editing Record 4 of 6".

Check to make sure that you have not made any mistakes when entering each of your records into the database. Refer to the following section, Editing Your Records, if you wish to make any changes.

EDITING YOUR RECORDS (Referral Section)

There will be times when you need to change some of the entries you have made in your database. For example, if you have entered the wrong address or misspelled an entry. If you did not make any mistakes in your database entries, just read

this section.

1. Use the keys listed in Moving Through Your Records to move to the record you wish to Edit.

2. The following keys will move your cursor in this record to the field you wish to edit. Remember that Big Left and Big Right require using the Ctrl key plus the Left and Right Arrow key.

BIG LEFT	- will move you to the first field
BIG RIGHT	- will move you to the last field
Return or TAB	- will move you to the next field
UP Arrow	- will move you to the previous field
DOWN Arrow	- will move you to the next field
LEFT Arrow	- will move you to the previous field
RIGHT Arrow	- will move you to the next field

3. To replace the contents of your wrong entry make sure you are located in the proper field. Note: it will be indicated in the control panel.

4. Type in your new entry. SYMPHONY will erase the old entry as soon as you begin typing. Press Return when you have completed your editing.

5. Press one of the following keys to store your corrected record and move to another record:

PgUp - will store current record and move you to the previous record

PgDn - will store current record and move you to the next record or a blank form if there are no more records

Home - will store current record and move you to the first

record in the database

End - will store current record and move you to the last record in the database

Note: Your newly edited record is not permanently stored in your database until you save your work again. Refer to Appendix (D) : Saving Your Work - Saving a Worksheet Again - Under the Same Name.

The next two sections, Deleting a Record and Adding a New Record will just be referral sections, so read through them and continue with the section: Creating Mailing Labels.

DELETING A RECORD (Referral Section)

If at any time you wish to delete an entire record, follow these instructions. We do not wish to delete a record so briefly read throught this section and continue with the next section:

1. Move to the record you wish to delete by using the appropriate keys as listed in Moving Through Your Records.
2. Press Delete.
3. Select Yes and press Return.

Note: Symphony will renumber your records and adjust the record-count statistics displayed in the control panel.

Note: Your new deletion is not permanently stored in your database until you save your work again. Refer to Appendix (D) : *Saving Your Work - Saving a Worksheet Again - Under the Same Name.*

ADDING A NEW RECORD (Referral Section)

When you add a new record to your database, you must enter the

new entry after the last record. If you have sorted the database, you will have to re-sort later to include your new entry in the sort. We will be sorting later.

1. Make sure you are in your database.
2. Press END to move to the last entry in your database.
3. Press PgDn to display a blank entry form.
4. Follow the steps in subsection: Entering Records into Your Database Form.

Note: Your new entry is not permanently stored in your database until you save your work again. Refer to Appendix (D) : *Saving Your Work - Saving a Worksheet Again - Under the Same Name*.

CREATING MAILING LABELS

Follow the directions to create the following a set of mailing labels.

1. The database form you created will be displayed, however, we will need to change to the SHEET environment.
2. Press TYPE (alt & F10).
3. Select SHEET and press Return.
4. Move the cell pointer to the bottom left hand *end* area of your worksheet. Move the cell pointer another three lines down as we wish to leave blank lines.
5. In one cell, you will need to enter the field names that you want to include in your mailing labels. To indicate what information will be selected from the database to customize each letter, an ampersand (&) must enclose the desired selection.

6. Type *&First Name& &Last Name&* on one line and press Return and move down to next line using your down pointer key.

Type *&Address&* and press Return and move to next line.

Type *&City& &Province&* and press Return and move to next line.

Type *&Postal Code&* and press Return and move to next line.

The format of your mailing label should now look like this:

&First Name& &Last Name&
&Address&
&City& &Province&
&Postal Code&

7. With your format created for each line of the mailing label, press MENU (F10).

8. Select Query and press Return.

9. Select Settings and press Return.

Note: your Database Settings Sheet appears.

10. Select Cancel and press Return.

11. Select Report and press Return (this erases the current Report range settings).

12. Select Report again and press Return.

13. Select Main and press Return.

14. Move your cell pointer to the cell where you entered your first line of your mailing label (&First Name& &Last Name&).

15. Press TAB to anchor the cell pointer. Highlight to the end of the mailing label using the down arrow key.

16. Make sure to highlight to the right if the label format and symbols have extended beyond the first cell. Press the right arrow key two times to do this.

17. Highlight 3 lines down past the rest of the mailing label format by pressing the down arrow key. This will allow spaces to be between each label.

18. Press Return.

19. Select Quit and press Return until you have cleared the top line of the menu (you must select Quit and press Return three times).

SORTING YOUR DATABASE BEFORE YOU PRINT

Sorting means to arrange the records in a database in a logical order according to a designated column or field.

When you sort your database, you have the option three sort keys (1st-Key, 2nd-Key, and 3rd-Key). The first sort key is the most important and the second and third sort keys act as tie-breakers. For example, in our database, we have two Jones' and if we wanted Mary Jones to come before Sally Jones, our first sort key would be by last name and our second sort key would be by first name. In this lesson, we will only be concerned with sorting by Last Name.

1. Press TYPE (alt & F10).

2. Select FORM and press Return.

3. Press MENU (F10).

4. Select Settings and press Return (notice: this is the Database settings sheet).

5. Select Sort-Keys and press Return.

6. Select 1st-Key and press Return.

7. Press MENU (F10). A list of your existing range names appear.

8. Select the field name, Last Name, and press Return.

9. Select *a* for ascending as we want to sort alphabetically in ascending order. Press Return. Note: if you had wanted to sort in descending order, type in *d* for descending.

10. Select Quit and press Return. Note: your form is displayed again.

Once you have indicated your sort key, you need to now sort the database.

11. Press MENU (F10).

12. Select Record-Sort and press Return.

13. Select All and press Return as we wish to sort 'all the records'. SYMPHONY automatically reorders the database.

Make sure that you SAVE YOUR WORK. Refer to Appendix (D) : *Saving Your Work - Saving A Worksheet Again - Under the Same Name*. Use the same name: *RSCD* or *rscd*.

PRINTING YOUR MAILING LABELS

Before you print, if you wish to sort your mailing labels refer to the section on SORTING YOUR DATABASE.

Also, before you print, make sure that your printer is on and that the paper is properly aligned.

1. Remaining in your present environment, press SERVICES (F9).

2. Select Print and press Return.

3. Select Settings and press Return.

4. If your Start-Page number is not 1, select Page and press Return (if it is 1, continue with step 9).

5. Select Number and press Return.

6. Select Start-Page and press Return.

7. Change the previous number to 1 and press Return.

8. Select Quit and press Return.

9. Select Source and press Return.

10. Select Database and press Return. Symphony will display a list of your database settings sheet names.

11. Select RSCD (Racquetball Sport Camp Database) and press Return.

12. Select Page and press Return.

13. Select Breaks and press Return.

14. Select No and press Return as we wish to continually print our mailing labels and not have page breaks between each label.

Note: you have now changed the default setting for Breaks from Yes to No. You might have to change it back when you want to print something else.

15. Select Quit and press Return.

16. Select Align and press Return.

17. Select Go and Symphony will begin to type your labels. It might take a few attempts to properly align the labels. If the labels are out of line, press BREAK (Ctrl & Scroll Lock). Make sure you align it again if you use this command.

(K) Exiting from the Symphony System

If you have completed your lesson for the day, to exit from the SYMPHONY System refer to Appendix (B) : *Exiting from the Symphony System*.

(L) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #8 OUTCOME:

Jim Black
23 University Ave
Edmonton Alberta
T3W 2L5

Mike Johnson
3456-117 St
Edmonton Alberta
T5R 4W3

Mary Jones
712 Arch Street
Four Hills Alberta
T4D 3P9

Sally Jones
23 Barford Drive
Leduc Alberta
T7Y 3D5

Jenny Mah
118 Brantford St
St. Albert Alberta
T8L 5R6

John Smith
10911-34 Ave
Edmonton Alberta
T6K 2E5

LESSON 9 - A DATABASE WITH A LETTER

Objectives:

1. To merge a modified version of the letter prepared in Lesson 4 with the database prepared in Lesson 8 in such a way as to prepare individualized letters to certain individuals in the database.

2. To save and print individualized letters to certain individuals in the database.

Points to Remember:

1. The letter in Lesson 4 was prepared in the Word Processing or DOC environment. The database in Lesson 8 was prepared using the Spreadsheet (SHEET) and Database (FORM) environments. In this lesson we will be using all three environments to create our individualized letters.

2. To select TYPE (Alt and F10), you must first press and hold the Alt key and then press F10.

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Lesson 4, Section A: *Entering the Symphony System* or refer to Appendix (A): *Entering the Symphony System*. Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Creating a Form Letter

1. We will retrieve *Letter1* that we typed during our word processing lesson.

2. It does not matter which environment you are in so remain in the SHEET environment and press SERVICES (F9).

3. Select File and press Return.

4. Select Retrieve and press Return.

5. Select *Letter1* and press Return.

6. We do not want to alter our Letter1, however, we do want to make another copy of it so we can alter the second copy.

7. To do this select SERVICES (F9) again.

8. Select File and press Return.

9. Select Save and press Return.

10. Press ESCAPE (Esc) and rename your letter by typing

Letter2. Press Return and you will now have 2 letters; *Letter1* and *Letter2*.

11. We will use this new file, *Letter2*, for this lesson so remain in this file.

12. Move your cursor to the name line of the address; Mary Jones.

13. Press Insert (Ins) as we will be typing over the name and address of this letter. You will see Ovr on the bottom right of the screen.

14. Type *&First Name& &Last Name&* on the first line and press Return.

15. Type *&Address&* and delete the rest of the line by pressing the Delete key until everything is deleted, except the sentence stopper.

16. Move the cursor to the beginning of the next line and type in *&City& &Province&* and delete the rest of the line as in number 15.

17. Move the cursor to the beginning of the next line and type in *&Postal Code&* and press Return.

18. Move the cursor to the next typed line, (Dear Mary) and where Mary is type *&First Name&:* . Press Return.

19. There are two more Mary's in the letter to replace. Make sure your Insert key is turned off (remove Ovr from bottom right of screen). Start typing *&First Name&* where Mary is and then use the delete key until the word Mary is deleted. Do this procedure twice as Mary appears twice in the body of the letter.

20. You will now have to alter your second paragraph that begins with *'By the way'*. To do this place your cursor any where in the second paragraph. Press Justify (F2) and your second paragraph will rejustify itself.

Note: your third paragraph will not need to be rejustified.

21. Move to two lines past the end of your completed letter and insert a Page Break to complete your Letter2. Refer to Lesson 5 : Page Break section. This will ensure that each letter will start on a new page when you print it.

Note: you now have customized information appearing in your letter from the database you created. Remember you must always spell the field name exactly as it appears in your database.

This is how your letter should look:

&First Name& &Last Name&
&Address&
&City& &Province&
&Postal Code&

Dear &First Name&:

It was a pleasure to have you as a participant in our Racquetball Sports Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our efforts.

By the way &First Name&, I note that your birthday is next week. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to your 1987 program. Best wishes and Happy Birthday &First Name&.

Sincerely,

Janet Smith
Camp Director

::

C) Saving A Form Letter

Before you continue, make sure that you save your form letter. You will save this file under the same name - *LETTER2*. Refer to Appendix (D) : *Saving Your Work - Saving a Worksheet Again - Under the Same Name*.

D) Combining Different Files

The two files that we will be using will be LETTER2 and RSCD. In order that we do not lose our file that we are copying on to, we will first make an extra copy of our database and use the second copy for this exercise.

1. Remain in the DOC environment and press SERVICES (F9).
2. Select File and press Return.
3. Select Retrieve and press Return.
4. You have more than one line of file names in the control panel so you must use your cursor to reach the proper file. Select *RSCD* by moving your cursor until you reach this file name. Press Return.
5. Press SERVICES (F9).
6. Select File and press Return.
7. Select Save and press Return.
8. Press Escape and rename your extra file as RSCD2 by typing *RSCD2*. Press Return.

Now you have two database files. We will use this second

database file as our working file.

9. Make sure you are in the SHEET environment by pressing TYPE (Alt & F10).

10. Select SHEET and press Return.

11. Place your cursor two lines beyond your database information in the left most position. Make sure that the rest of the worksheet is blank.

12. Press SERVICES (F9).

13. Select File and press Return.

14. Select Combine and press Return.

15. Select Copy and press Return.

16. Select Entire-File as we will be using the entire Letter2. Press Return.

17. Select Ignore and press Return.

18. Select Formulas and press Return.

19. Select LETTER2 and press Return. You should now be ready to print your form letter using your database as they are now one file.

Note: the Letter2 should return to the screen. To view it, use PgDn.

Carry on with the next section of instructions to get ready to print.

E) Printing a Form Letter

To print a form letter you first need to specify the range of cells that contain the letter as the report range on the Database settings sheet.

Note: if your form letter and database are two separate

files, before you print you must combine the two files so they are retrievable on one file. Make sure that you have completed the previous Section D: *Combining Different Files* first (we just completed this section).

1. Press TYPE (alt & F10).
2. Select SHEET and press Return.
3. Press MENU (F10).
4. Select Query and press Return.
5. Select Settings and press Return. Note: the Database settings sheet appears.
6. Select Cancel and press Return.
7. Select Report to cancel any existing Report settings and press Return.
8. Select Report again and press Return.
9. Select Main and press Return.

Note: there are two address headings close together. Start your highlight with the 2nd one as the first one was created for your mailing labels.

10. Move your cell pointer to the beginning of the second address.
11. Press TAB to anchor the cell pointer.
12. Highlight the whole range that contains the letter you just combined with your database by using your down arrow key. Make sure that you include the Page Break in your highlight. Also make sure to highlight past the right margin of the document by using your right arrow key until you have completely highlighted the entire letter.

13. Press Return.

14. Select Quit and press Return. Do this three times to clear the control panel and return to normal position.

F) Printing a Multiple-Pass Report

You are now ready to print a multiple pass report.

1. Turn your printer on and make sure the paper is aligned properly.

2. Press SERVICES (F9).

3. Select Print and press Return.

4. Select Settings and press Return.

5. Select Source and press Return.

6. Select Database and press Return. The screen will display all of your Database settings sheet names.

7. Select RSCD (the name we used for our Racquetball Sport Camp Database earlier) and press Return.

8. Select Quit and press Return.

Note: If you wish to print All of the database letters, go to step 25 to continue. If you wish to print only certain records, continue with steps 9 through 23.

In this lesson we will continue with steps 9 through 23.

G) Printing Only Certain Records - Changing Selection Criteria

9. We are only going to print letters to all the Males on our database we created in Lesson 8.

10. Press TYPE (Alt & F10).

11. Select FORM and press Return.

12. Press MENU (F10).

13. Select Criteria and press Return.

14. Select Edit and press Return.

15. Note that the form is blank. Press Return until the cursor is located in the Sex field.

16. Type *Male* in the Sex field and press Return.

17. Press Insert key (Ins) and the criterion record will be stored.

18. Press PgUp to exit from the criteria entry process.

19. Press MENU (F10).

20. Select Criteria and press Return.

21. Select Use and press Return.

22. To make sure that only the Males will be printed, view your database by using PgUp and PgDn to view. Only your Male records should be visible.

23. Press SERVICES (F9).

24. Select Print and press Return.

25. Select Align and press Return.

26. Select Go and press Return. Your database letters will start printing. If you wish to interrupt the printing, press Break.

27. Select Page-Advance and press Return.

28. Select Quit and press Return. The cursor will return to the original position.

H) Returning to the Original Set of Records

When you specify to print only certain records, as in the previous Section G, you will only be able to view those certain records. To return to all the records being displayed

in your database after you have printed only certain records, you must complete the following instructions in order to display the entire database again.

1. Press TYPE (Alt & F10).
2. Select FORM and press Return.
3. Press MENU (F10).
4. Select Criteria and press Return.
5. Select Ignore and press Return.
6. The cursor will return to your database so view through each entry to make sure you have all 6 again. Use PgDn and PgUp keys to view.

I) Exiting from the Symphony System

If you have completed your lesson for the day, to exit from the SYMPHONY System refer to Appendix (B) : *Exiting from the Symphony System.*

J) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #9 OUTCOME:

Letter #1

Jim Black
23 University Ave
Edmonton Alberta
T3W 2L5

Dear Jim:

It was a pleasure to have you as a participant in our Racquetball Sports Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our efforts.

By the way Jim, I note that your birthday is next week. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to your 1987 program. Best wishes and Happy Birthday Jim.

Sincerely,

Janet Smith
Camp Director

Letter #2

Mike Johnson
3456-117 St
Edmonton Alberta
T5R 4W3

Dear Mike:

It was a pleasure to have you as a participant in our Racquetball Sports Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our efforts.

By the way Mike, I note that your birthday is next week. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to your 1987 program. Best wishes and Happy Birthday Mike.

Sincerely,

Janet Smith
Camp Director

Letter #3

John Smith
10911-34 Ave

Edmonton Alberta
T6K 2E5

Dear John:

It was a pleasure to have you as a participant in our Racquetball Sports Camp last summer. We are continually trying to improve our program and keen participants such as you add greatly to our efforts.

By the way John, I note that your birthday is next week. Please accept the best wishes of our entire Sport Camp staff for a very exciting day.

As spring approaches we will be sending you a package of information pertaining to your 1987 program. Best wishes and Happy Birthday John.

Sincerely,

Janet Smith
Camp Director

LESSON 10 - ADVANCED TASKS FOR DATABASE MANAGEMENT

Objectives:

1. To introduce the user to several advanced tasks of SYMPHONY which are commonly used in Database Management.

2. To print and save your entire data management ranges.

Points to Remember:

1. This lesson is optional and may be omitted without affecting the continuity of the lessons which follow.

2. This lesson requires a familiarity with the six "Data Management Ranges" described in Lesson 8. The student is advised to re-read Lesson 8 prior to beginning Lesson 10.

DATABASE MANAGEMENT PROBLEM

Our existing database is completely finished now. However,

instead of sorting by sex, we have now decided we want to sort by *Birthmonth*. Our birthdate field consists of year, month and day so we need to create another field to indicate only *Birthmonth*.

Note: it is not possible to use the birthdate field we have created to sort by *Birthmonth*. You must create another field that only specifies *Birthmonth*.

Try to add another field to your existing database without starting with a completely new database. Just revise your existing one by creating another field within it and make sure to update each of the individuals *Birthmonth* field by using the same birthdate month.

DATABASE MANAGEMENT SOLUTION

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Appendix (A) : *Entering the Symphony System*. However, because we have already formatted our diskettes, steps 7 through 11 may be eliminated.

B) Retrieving Your File

We wish to retrieve our file *RSCD*. Refer to Appendix (E) : *Retrieving Your File*.

C) Adding a New Field

First you will have to add the field in the Entry Range (Second Section).

1. Press TYPE (Alt & F10).
2. Select SHEET and press Return.
3. Move your cell pointer to the cell in the Entry Range

(Second Section) where the *Sex* field is located.

4. We will insert a blank row so press MENU (F10).

5. Select Insert and press Return.

6. Select Rows and press Return.

7. Press Return again and your blank row will appear.

8. Type in the name, *Birthmonth*, press your space bar once and then draw a line with your underscore key (by pressing the shift key and the hyphen key) as in the rest of the fields. Use 3 underscores as your length.

9. Press Return.

Next you will have to add the new field in the Definition Range (Third Section). It must be the exact field name and length you used in the Entry Range (Second Section) and, as well, must be located between the same fields.

1. Move your cell pointer to the cell in the Definition Range (Third Section) that corresponds to the same cell in the Entry Range you moved to (*Sex* field).

2. Press MENU (F10).

3. We will insert a row again so select Insert and press Return.

4. Select Rows and press Return.

5. Press Return again and your blank row will appear.

6. With your cell pointer in this Name column (extreme left), type the field name, *Birthmonth* and press Return.

7. Move your cell pointer to the right to the empty cell in the Type column.

8. Type *L:3* (field type and field length) and press Return.

Remember, the Birthmonth field is a label not a date.

9. Move the cell pointer in the same row directly to the right to the empty cell in the Prompt column (Note: you will not see it until you have actually reached it).

10. Type *Enter Birthmonth* and press Return.

Now you must add your new field to the Other Ranges; Report Range, Criterion Range, and Database Range. This time, however, you must add a new column between the same fields as the Entry and Definition ranges (Do not use the Insert command).

1. Move your cell pointer down to the Report Range (Fourth Section) where you wish to add your new field (the cell pointer should be in the cell containing the field name *Sex*).

2. Press MENU (F10).

3. Select Move and press Return.

4. We wish to move the *Sex* column from this point over one column.

5. Press the down arrow key until you have highlighted all the rows under the Report, Criterion and Database ranges, including all the data records in the Database range.

6. Press Return.

7. We want to move this range we have highlighted over one column so press the right arrow key once to move the cell pointer one cell to the right.

8. Press Return and your *Sex* column should shift over one column and a blank column should appear.

9. In the empty column, type in *Birthmonth* as your new field

name and press Return.

10. Now move your cell pointer down to the empty cell in the Criterion Range (Fifth Section) where the field name should be placed.

11. Type in *Birthmonth* as your new field name and press Return.

12. And lastly, move your cell pointer down to the empty cell in the Database Range (Sixth Section) where the field name should be placed.

13. Type in *Birthmonth* as your new field name and press Return.

D) Creating a Range Name for Your New Field

1. With your cell pointer in the Database Range (Sixth Section) and in the column Birthmonth, press MENU (F10).

2. Select Range and press Return.

3. Select Name and press Return.

4. Select Labels and press Return.

5. Select Down and press Return.

6. Press Return again.

7. Press TYPE (Alt & F10).

8. Select FORM and press Return. Your new modified form will appear. You are now ready to enter data in each record for your new field.

E) Entering Records into Your New Field

1. Press the PgUp key until you are located in your first record.

2. Move your cursor, with the down arrow key, to the empty

field in each record and type in the appropriate *Birthmonth* of the specific individual's record (ie. Dec for December).

3. Press Return.

4. Press Insert to insert the new information into each record.

5. Page Down (PgDn) to each successive record and type in the appropriate *Birthmonth*, making sure to press Return and press Insert for each new record.

6. Once you have updated each of the individual records, make sure that you Save Your Updated File under the same name (RSCD). Refer to Appendix D: *Saving Your Work - Saving a Worksheet Again - Under the Same Name*.

F) Updating Your Range Name

1. Press TYPE (Alt & F10).

2. Select SHEET and press Return.

3. Press the Home key to return home.

4. Move your cell pointer to the cell where the *Sex* field is in the Name Range (First Section).

5. We will insert a blank row again so press MENU (F10).

6. Select Insert and press Return.

7. Select Rows and press Return.

8. Press Return again and a blank row will appear.

9. Type in your new field name, field type and field length *Birthmonth:L:3* and press Return.

G) Sorting Your Database

We will be sorting our database by *Birthmonth* and in Ascending order.

1. Press TYPE (alt & F10).
2. Select FORM and press Return.
3. Press MENU (F10).
4. Select Settings and press Return.
5. Select Sort-Keys and press Return.
6. Select 1st-Key and press Return.
7. Press MENU (F10).
8. Select the field name, *Birthmonth* and press Return.
9. Select *A* for ascending and press Return.
10. Select Quit and press Return.
11. Press MENU (F10).
12. Select Record-Sort and press Return.
13. Select All and press Return.

Note: because your Birthmonth field is a label, it sorts alphabetically from A to Z, not from January to December.

Printing Your Entire Data Management Ranges

1. Press TYPE (Alt & F10).
2. Select SHEET and press Return.

We will need to alter our column widths so they will not overlap when we print.

3. Move your cell pointer to anywhere in column A.
4. Press MENU (F10).
5. Select Width and press Return.
6. Select Set and press Return.
7. Type *12* for our width in column A and press Return.
8. Repeat steps 4 through 7 to change the width of column *B to 16, C to 19, D to 12, E to 10, F to 13, G to 11, H to 11*

and I to 7. Make sure you are in the correct column before you begin step 4.

Once you have changed these widths, you are ready to print.

9. Press SERVICES (F9).
10. Select Print and press Return.
11. Select Settings and press Return.
12. Select Source and press Return.
13. Select Range and press Return.
14. Move your cell pointer to Home position (A1).
15. Press TAB and press the down arrow key until you have highlighted to the last record in the Database Range (Jenny).
16. Now, press the right arrow key until you have highlighted to and including column I.
17. Press Return. Note: your Source is *Range A1..I46*.
18. Turn on your printer and align the paper properly.
19. Select Quit and press Return.
20. Select Align and press Return.
21. Select Go and press Return.

Note: Symphony cannot fit your entire line of the Database range across the page. The remaining columns will print on a new page and then you can paste the pages together.

22. Once you have finished printing, select Quit and press Return.

Make sure that you save your updated information as RSCD again. Refer to Appendix D: *Saving Your Work - Saving a Worksheet Again - Under the Same Name.*

I) Exiting from the Symphony System

If you have completed our lesson for the day, refer to Appendix (B) : *Exiting from the Symphony System.*

J) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #10 OUTCOME:

```
First Name:L:6
Last Name:L:8
Address:L:20
City:L:10
Province:L:8
Postal Code:L:8
Birthdate:D:10
Birthmonth:L:3
Sex:L:8

First Name _____
Last Name ______
Address _________________
City ________
Province ______
Postal Code ______
Birthdate ________
Birthmonth __
Sex ______
```

Name	Value	Type	Default	Formula	Validity	Input	Prompt
First Name	Mary	L:6					Enter First Name
Last Name	Jones	L:8					Enter Last Name
Address	712 Arch Street	L:20					Enter Address
City	Four Hills	L:10					Enter City
Province	Alberta	L:8					Enter Province
Postal Code	T4D 3P9	L:8					Enter Postal Code
Birthdate	25-Dec-55	D:10					Enter Birthdate
Birthmonth	Dec	L:3					Enter Birthmonth
Sex	Female	L:8					Enter Sex

First Name	Last Name	Address	City	Province	Postal Code	Birthdate	Birthmonth	Sex
Mary	Jones	712 Arch Street	Four Hills	Alberta	T4D 3P9	25-Dec-55		Female

First Name	Last Name	Address	City	Province	Postal Code	Birthdate	Birthmonth	Sex

First Name	Last Name	Address	City	Province	Postal Code	Birthdate	Birthmonth	Sex
Mary	Jones	712 Arch Street	Four Hills	Alberta	T4D 3P9	25-Dec-55	Dec	Female
John	Smith	10911-34 Ave	Edmonton	Alberta	T6K 2E5	13-Feb-54	Feb	Male
Jim	Black	23 University Ave	Edmonton	Alberta	T3M 2L5	03-Jul-57	Jul	Male
Mike	Johnson	3456-117 St	Edmonton	Alberta	T5R 4M3	24-May-51	May	Male
Sally	Jones	23 Barford Drive	Leduc	Alberta	T7Y 3D5	23-Nov-50	Nov	Female
Jenny	Mah	118 Brantford St	St. Albert	Alberta	T8L 5R6	10-Sep-52	Sep	Female

LESSON 11 - INTRODUCTION TO SPREADSHEET

Objectives:

1. To create a spreadsheet using the basic functions of the SHEET environment.

2. To save and print the spreadsheet.

Points to Remember:

1. Caps Lock key does not affect the number keys of the keyboard. For example, if the Caps Lock key is on, the 6 will still be inserted rather that the ^. To get the ^ inserted with the Caps Lock key on, hold down the shift key as you would normally.

2. The @ is located on the number key 2. It is not the same as the & which is located on the number key 7.

3. There are several ways of entering data into a spreadsheet in addition to pressing the Return key. They are described in the body of this lesson.

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Lesson 4, Section A: *Entering the Symphony System* or refer to Appendix (A) : *Entering the Symphony System*. Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Entering the Spreadsheet Environment

Once you have completed the steps to re-enter the Symphony System, the environment you are already in is the SHEET. This is the Spreadsheet environment and should be indicated in the upper right hand corner of the monitor.

C) Explanation of the SHEET (Spreadsheet) Environment

1. Locate each of the following, again, in the unique display format of the SHEET environment.

CELL - is the intersection of a column and a row. The spreadsheets building blocks are cells.

CONTROL PANEL - The top, left hand corner indicates the address of the current cell. When you move the cell pointer from one cell to a different cell, the address changes in the control panel accordingly. The top, right hand corner indicates the environment in which you are located. It should read SHEET for our purposes now.

CELL POINTER - is the highlighted bar that indicates where you are located presently in the spreadsheet.

COLUMNS - are designated by letters and are vertical in length.

ROWS - are designated by numbers and are horizontal in length.

Each cell in your worksheet can either have a label, a number or a formula placed inside. A label is one or more words. A number is one or more digits. And a formula is a calculation you perform.

2. To move around the SHEET environment you move the cell pointer to the cell you wish by using the pointer-movement keys. Practice using the following pointer-movement keys to move around the SHEET environment.

RIGHT - will move the cell pointer one cell to the right

LEFT - will move the cell pointer one cell to the left

UP - will move the cell pointer one cell up

DOWN - will move the cell pointer one cell down

3. We will introduce each of the SHEET environment commands as we need them. To indicate the menu of the SHEET environment, make sure you are in the SHEET environment and then press MENU (F10). In this menu are the following commands:

Copy command - will allow you to copy a cell or range of cells to another portion of the worksheet

Move command - will allow you to move the contents of a cell or range of cells from one place in the spreadsheet to another place

Erase command - will allow you to erase the contents of a cell or range of cells

Insert command - will allow you to insert more columns or rows into the spreadsheet

Delete command - will allow you to delete columns or rows from the spreadsheet

Width command - will allow you to change the width of the individual columns from the default setting

Format command - will allow you to change the displayed format of all values and formulas within a range from the format default setting

Range command - will allow you to name ranges, assign labels to ranges, calculate frequency distribution of ranges and convert formulas to fixed numeric values plus many more functions regarding the setting and

manipulation of ranges

Graph command - will allow you to represent the data from your spreadsheet in the form of a graph

Query command - will allow you to perform a variety of functions related to entering, manipulating and searching for data in a database that is contained on your spreadsheet

Settings command- includes the default settings for the SHEET environment

4. Press the Esc key to return to the SHEET environment.

D) Creating An Individual Scoring Spreadsheet

We will create the following spreadsheet for our Racquetball Sports Camp. The directions immediately follow this example.

SCORING

NAME	SPIKES	BLOCKS	DIGS	SERVES
Jim Black	15	12	12	8
Mike Johnson	12	16	10	11
Sally Jones	10	14	12	15
Mary Jones	12	14	15	12
Jenny Mah	10	13	18	14
John Smith	16	12	14	12
AVERAGE	12.5	13.5	13.5	12

ADJUSTING THE COLUMN WIDTH

We must make sure that all our columns are the proper width.

1. On your blank spreadsheet, place the cell pointer in cell A1 (top, left hand corner).
2. Press MENU (F10).
3. Select Width and press Return.
4. Select Set and press Return.

5. Type in the number 14 as we want our first column to have 14 spaces within it and press Return.

6. Move your cursor to anywhere in column B and set the width of the column at 10. Follow steps 2 to 5 and make sure to use 10 as your number of spaces.

7. Adjust columns C,D, and E using the same procedure as step no. 6. You want columns C,D, and E to also have 10 spaces each for their width.

ENTERING YOUR LABELS

1. Move the cell pointer to cell A1 (top, left hand corner).

2. Type ^ . This ^ will center your label in column A.

3. Turn on the Caps Lock key. Press the Ctrl key and hold while you type the letter *B* as we are going to underline the heading (B or b - begins the print attribute). Release the Ctrl key.

4. Type *USCORING* (U or u - signifies to underline *SCORING*, the title of your spreadsheet. It is a *Print Attribute*). See Appendix G for more *Print Attributes*.

5. Press the Ctrl key and hold while you type the letter *E* to complete the underlined title (E or e - ends the print attribute). Release the Ctrl key.

6. Move to cell A3 and type *NAME* and press Return.

7. Move to cell B3 and type *SPIKES* and press Return.

8. Move to cell C3 and type *BLOCKS* and press Return.

9. Move to cell D3 and type *DIGS* and press Return.

10. Move to cell E3 and type *SERVES* and press Return.

11. Turn the Caps Lock key off.

You have now completed your Labels for your spreadsheet. If you had wanted to alter the position of any of your labels, you would choose the appropriate indicator:

^ - will position the label in the center of the cell

' - will position the label at the left of the cell

" - will position the label at the right of the cell

Note: these commands above *cannot* be used when entering *NUMBERS* because if you use calculations, this command will not allow your calculations to work.

ENTERING DATA

1. Move the cell pointer to the fifth row, cell A (ie. A5).
2. Type *Jim Black* and press Return.
3. In the same row, move over to cell B and type *15*.
4. Move to cell C and type *12*.
5. Move to cell D and type *12*.
6. Move to cell E and type in *8*.

You have completed the first entry for Jim Black in your spreadsheet. Complete the rest of the spreadsheet until you have entered all the scoring for each of the participants, John Smith being the last participant. Do not enter the dotted line, nor the AVERAGE line as we will do this later.

NOTE: When you complete an entry by pressing :

RETURN - it will leave cell pointer in the current cell

DOWN ARROW - it will move cell pointer one cell down

UP ARROW - it will move cell pointer one cell up

LEFT ARROW - it will move cell pointer one cell to the left

RIGHT ARROW - it will move cell pointer one cell to the

right

ALIGNING YOUR LABELS

Note: when entering labels into a spreadsheet, the default left justifies the label. When entering numbers into a spreadsheet, the default right justifies the numbers.

We will align the labels so the spreadsheet will look better.

1. Move the cell pointer to the cell containing the *SPIKES* label.
2. Press MENU (F10).
3. Select Range and press Return.
4. Select Label-Alignment and press Return.
5. Select Right and press Return. We wish to align the labels to the right - the same as tne numbers are aligned.
6. Highlight the rest of the labels to the right by pressing the right arrow key until you have highlighted the *SPIKES, BLOCKS, DIGS, AND SERVES* labels.
7. Press Return and notice how your labels become aligned.

ENTERING REPEATED CHARACTERS

1. The next line is a repeated character through each cell (ie. to draw a line across the page).
2. Place the cell pointer on row 11, cell A and make sure that CAPS LOCK is turned off.
3. Type \- and press Return. \ means that you want to repeat the following character through the whole cell.
4. Move to row 11 of cells B,C,D, and E consecutively, and repeat step 3.

ENTERING FORMULAS

1. After you have completed to John Smith in the spreadsheet, and entered your repeated character to draw a line across the cells, move the cell pointer to row 13, cell A.

2. Type *AVERAGE* and press Return.

3. Move to row 13, cell B and type *@avg(b5..b10)* and press Return. The number that enters this cell is the average of all the individuals spikes. Note: this is one way of entering a formula into a spreadsheet using an individual method.

4. Move to row 13, cell C. This time we will practice a different way of entering a formula into a spreadsheet. We will copy it to the rest of the spreadsheet to save time and work.

5. Type *+@avg(C5..C10)* in row 13, cell C and press Return.

Note: the + before @avg indicates that this is a formula and not a label.

6. Press MENU (F10).

7. Select Copy and press Return.

8. Press Return again as we wish to copy from this block (C13).

9. Type in *D13..E13* as we wish the formula to calculate the averages of column D and E and this is the address of the rest of the rows to be calculated. Note: typing in the address is a fast way of highlighting without using the TAB and arrow keys.

10. Press Return and your calculations will be updated.

Note: you must indicate the address of each of the scores which you want to include in the average or you must highlight

them.

E) Saving Your Spreadsheet

Before you continue, make sure that you save your spreadsheet. You will save this file under the name *Score*. Refer to Appendix (D) : *Saving Your Work - Saving a New Worksheet*.

F) Printing Your Spreadsheet

1. Turn on the printer and make sure the paper is aligned properly.
2. Press SERVICES. (F9)
3. Select Print and press Return.
4. Select Settings and press Return.
5. Select Source and press Return.
6. Select Range and press Return.
7. Highlight the range that you wish to print by typing in *A1..E14* (this is the whole spreadsheet). Press Return.
8. Select Quit and press Return.
9. Select Align to reset the mechanism for counting pages and line numbers. Press Return.
10. Select Go and press Return. Your spreadsheet should be printing.
11. Once your printing is completed, select Page-Advance and press Return.
12. Select Quit and press Return.

G) Exiting from the Symphony System

If you have completed your lesson for the day, to exit from the SYMPHONY system refer to Appendix (B) : *Exiting from the*

Symphony System.

H) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #11 OUTCOME:

SCORING

NAME	SPIKES	BLOCKS	DIGS	SERVES
Jim Black	15	12	12	8
Mike Johnson	12	16	10	11
Sally Jones	10	14	12	15
Mary Jones	12	14	15	12
Jenny Mah	10	13	18	14
John Smith	18	12	14	12
AVERAGE	12.5	13.5	13.5	12

LESSON 12 - ADDITIONAL TASKS FOR SPREADSHEET

Objectives:

1. To modify and enhance the spreadsheet created in Lesson 11.
2. To automatically calculate the totals for each row of the spreadsheet.
3. To automatically calculate the average for the columns of the spreadsheet.
4. To sort the spreadsheet based on one column.
5. To create a new column which indicates ranking.
6. To save and print the spreadsheet.

Points to Remember:

1. Several commands used in this lesson (eg. Query, Settings etc.) are briefly described in Lesson 11.

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Appendix (A) : *Entering the Symphony System*. Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Working on Your Individual Scoring Spreadsheet

Retrieve your file, *SCORE*. Refer to Appendix (E) : *Retrieving Your File*.

For this next section, we will save our spreadsheet *Score* again only this time under a new name so we can use our second copy as our working copy. Use the name *Score2* in order to distinguish between the two. Refer to Appendix (D) :*Saving Your Work - Saving A Worksheet Again - Under a New Name*.

CORRECTING YOUR ENTRIES

By Replacing the Entire Entry

1. Using the new file SCORE2, move the cell pointer to the label *NAME*. Notice that the cell contents appear in the control panel. We wish to replace this entire label with another label.

2. Type *PARTICIPANTS* in capital letters and notice that it is typing on line 2 of the control panel. Press Return. Note that when you press Return, your new entry has replaced the previous entry.

By Replacing Part of An Entry

1. Move the cell pointer to the cell containing, *Jim Black*.

2. Jim wants to be called Jimmy, so we will EDIT this entry.

3. Press EDIT (F2). The Edit mode will be indicated in the top, right hand corner of the screen.

4. Move the cursor to the space between *m* and *B* and type in *my*. Press Return and notice that the cell now reads, *Jimmy Black*.

When in the Edit mode (F2) you can use the keys as follows:

LEFT or RIGHT ARROW - to move the cursor left or right one character

HOME - to move the cursor to the beginning of the entry

END - to move the cursor to the end of the entry

DELETE - to delete the character at the cursor

BACKSPACE - to delete the character before the cursor

MOVING AROUND YOUR SPREADSHEET

Moving to a Specific Cell

1. Press GOTO (F5).
2. Type *B3*, the cell address of the cell you wish to move to.
3. Press Return and you should be at the indicated cell, B3.

Moving to the Beginning

1. Press the HOME key and note that you will be in cell A1, at the beginning of your worksheet.

Moving by Screens

1. Press PgDN to move one page down.
2. Press PgUp to move one page up.
3. Press Big Right (hold down the Ctrl key and press the Right pointer movement key) to move one page to the right.
4. Press Big Left (hold down the Ctrl key and press the Left pointer movement key) to move one page to the left.

ERASING AN ENTRY

1. Move the cell pointer to *Mary Jones*.

2. Press MENU (F10).

3. Select Erase and press Return.

4. Specify the range you wish to erase by typing in A8.

5. Press Return and Mary Jones should disappear.

Note: instead of specifying a range by typing its address, you could also have highlighted it. In our exercise we only erased one cell, so it is easier to just type the address.

You can use highlighting with many cells. Refer to Appendix (H) : *Highlighting Your Work*.

DELETING A ROW

1. Move the cell pointer to cell A8 where you just erased Mary Jones.

2. Press MENU (F10).

3. Select Delete and press Return.

4. Select Rows and press Return. Press Return again.

Notice that you have deleted one row. If you had wished to delete more than one, you would highlight UP or DOWN, using the up or down arrow keys, before the 2nd press of the Return key.

Also note that your Averages change when you delete a row. It automatically recalculates.

INSERTING A ROW

1. Move the cell pointer to cell A8.

2. Press MENU (F10).

3. Select Insert and press Return.

4. Select Rows and press Return. Press Return again.

Notice that you have inserted only one row. If you had

wished to insert more than one, you would highlight UP or DOWN before the 2nd press of the Return key. Refer to Appendix (H) : *Highlighting Your Work*.

MOVING AN ENTRY

1. Move the cell pointer to cell A10 (John Smith).
2. Press MENU (F10).
3. Select Move and press Return.
4. We want to move this whole row to the blank row. Specify the range to move by typing *A10..E10* and press Return.
5. Move the cell pointer to the row we wish to move to: A8.
6. Press Return and your entry should be moved.

Note: you must move the cell pointer to an empty row in order to ensure it does not replace what is already in that row. Refer to the previous section : *Inserting a Row*.

COPYING AN ENTRY

1. Move the cell pointer to cell *A8* (John Smith).
2. Press MENU (F10).
3. Select Copy and press Return.
4. Highlight the entire row beginning with John Smith by pressing the RIGHT pointer-movement key four times. Make sure you have highlighted to include the Serve score.
5. Press Return.
6. Type the address *A10* or move the cell pointer to A10 and press Return. You now have John Smith's score listed twice.
7. Before we continue, move your cell pointer to A8 and replace the entire row with the statistics we erased on Mary Jones. Type *Mary Jones* in cell A8 and move to B8 and type *12*,

move to C8 and type *14*, move to D8 and type *15*, and move to E8 and type *12*. Press Return to enter this last value. You have now replaced the second John Smith with Mary Jones again.

8. With all the changes you made, your averages of each column, SPIKES, BLOCKS, DIGS and SERVES must be recalculated.

9. Move to cell B13 and type *@avg(b5..b10) and press Return.*

10. Press MENU (F10).

11. Select Copy and press Return.

12. Press Return again as we wish to copy from this block (B13).

13. Type C13..E13 and press Return. Your calculations will be updated.

INSERTING A COLUMN

1. Move the cell pointer to anywhere in column C.
2. Press MENU (F10).
3. Select Insert and press Return.
4. Select Columns and press Return. Press Return again.

Notice that you have inserted only one column. If you had wished to insert more than one, you would highlight LEFT or RIGHT, using your left or right arrow keys, before the 2nd press of the Return key.

DELETING A COLUMN

1. Move the cell pointer to anywhere in cell C.
2. Press MENU (F10).
3. Select Delete and press Return.
4. Select Columns and press Return. Press Return again.

Notice that you have deleted one column. If you had wished

to delete more than one, you would highlight to the LEFT or RIGHT before the 2nd press of the Return key.

INSERTING ANOTHER COLUMN WITH A NEW FORMULA

Before we practice Sorting, we are going to add or insert another column into our spreadsheet.

1. Still in your spreadsheet, *Score2*, move your cell pointer to column 'F'. We will use the default setting 9 for the column width so do not change this.

2. Move to cell F3 and type *TOTAL* as your label. Press Return.

3. Move the cell pointer to F5 and type in the following formula to obtain the total points that Jim Black accumulated for Spikes, Blocks, Digs, and Serves: *(+B5+C5+D5+E5)* and press Return. Note: Jimmy Blacks total of 47 appears. We want to copy this formula to calculate the rest of our totals (follow steps 4 through 7 to see the result).

4. Keep the cell pointer in F5 and press MENU (F10).

5. Select Copy and press Return.

6. Type in *F5* and press Return. We are going to copy the formula in F5 to F6 through F10.

7. Type *F6..F10* and press Return. Note that all your rows have been totalled throughout the column.

8. Move your cell pointer to F11 and type \- and press Return.

9. Move your cell pointer to F13 and type *@avg(F5..F10)*. Press Return and your have the average of column F.

SORTING YOUR SPREADSHEET

In our lesson we are going to sort Column F that we just added. Make sure you are in the SHEET environment.

Indicating the Sort Key

1. To begin the process of sorting press MENU (F10).
2. Select Query and press Return.
3. Select Settings and press Return.
4. Select Basic and press Return.
5. Select Database and press Return.
6. Type *A4..F10* as your database range and press Return.
7. Select Quit and press Return.
8. Select Sort-Keys and press Return.
9. Select 1st-Key and press Return.
10. Highlight F5 through F10 by moving the cell pointer to F5, pressing your TAB key and then the down arrow key until you have painted F5 through F10. Press Return.
11. Type *D* for *descending* and press Return. We will sort in descending order (note: if you had wanted to sort in ascending order, type *A*).
12. Select Quit twice.

Beginning the Sort

1. Press MENU (F10).
2. Select Query and press Return.
3. Select Record-Sort and press Return.
4. Select All so all records are sorted during the sort. Press Return (note: if you had wished to eliminate duplicate records during the sort, we would have selected Unique).
5. Select Quit and press Return.

Note: the records are now in descending order.

If you wish to save this sort, refer to Appendix (D) : *Saving Your Work - Saving a Worksheet Again - Under the Same Name* and keep the file name, *Score2*.

FILLING A RANGE

Sometimes you wish to enter a sequence of numbers that increases or decreases by the same number. Instead of typing in each number, you can specify the starting number and the step number (number which you wish to increase or decrease successive numbers). Symphony will enter these numbers into a specified range. In our example, we wish to rank our participants from 1 to 6 based on their totals.

1. Press MENU (F10).
2. Select Range and press Return.
3. Select Fill and press Return.
4. Because our participants are already in order, we will fill the range G5..G10. Type in *G5..G10* and press Return.
5. We wish to start with 1 so type in *1* as your Start Value and press Return.
6. We wish to increase by 1 each time so type in *1* as your Step Value and press Return.
7. We wish to stop at value 6 as we only have 6 participants so type in *6* as your Stop Value and press Return.

Note: your range is now filled.

8. To fix up your spreadsheet, name column G, RANGE, by typing *RANGE* in capital letters in cell G3. Press Return.
9. Move your cell pointer to cell G11 and type in \- and

press Return.

Note; our spreadsheet is again not aligned properly so we must align the labels again. Refer to Lesson 11 : *Aligning Your Labels* again so your spreadsheet will look proper. Just align your *TOTAL* and *RANGE* labels following the instructions.

C) Saving Your Spreadsheet

You must make sure to save your spreadsheet, *Score2*, so that all the changes you have made will not be lost. Refer to Appendix (D) - *Saving Your Work - Saving a Worksheet Again - Under the Same Name*. Use the file name, *Score2* again.

D) Printing Your Spreadsheet

If you want to sort the spreadsheet before you print it, refer to *Sorting Your Spreadsheet* section as we previously completed.

Before you print your spreadsheet, complete the following two sections on Hiding a Column and Displaying Hidden Columns Again.

HIDING A COLUMN

1. Move the cell pointer to anywhere in column B and press MENU (F10).
2. Select Width and press Return.
3. Select Hide and press Return.
4. Press the RIGHT pointer movement key three times to highlight columns B,C,D, and E.
5. Press Return.

Note: the columns you highlighted have now disappeared from the screen.

DISPLAYING THE HIDDEN COLUMNS AGAIN

1. Move the cell pointer to where column B would be located. It is now column F.
2. Press MENU (F10).
3. Select Width and press Return.
4. Select Display and press Return. Note that your columns are displayed again. However, also note the asterisk (*) above them.
5. Press the LEFT pointer movement key four times to highlight columns E,D,C,B. Column F will also be highlighted too but don't worry about this. Press Return again and the asterisks will disappear and your columns will be displayed again.

PRINTING

1. Turn on the printer and make sure the paper is aligned properly.
2. Press SERVICES (F9).
3. Select Print and press Return.
4. Select Settings and press Return.
5. Select Source and press Return.
6. Select Range and press Return.
7. Highlight the range that you wish to print by typing in *A1..G14* (this is the whole spreadsheet). Press Return.
8. Select Quit and press Return.
9. Select Settings again and press Return.
10. Select Margins and press Return.
11. Select Right and press Return.

12. Change the default setting for the right margin from 76 to 80 by typing in 80.

13. Press Return.

The reason we have changed the margin setting is that the spreadsheet is larger then 76 characters in width and we wish to print it on one sheet only. If we do not change this setting, the columns on the right that do not fit will be printed as a separate page.

14. Select Quit and press Return.

15. Select Quit again and press Return.

16. Select Align to reset the mechanism for counting pages and line numbers. Press Return.

17. Select Go and press Return. Your spreadsheet should be printing.

18. Once your printing is completed, select Page-Advance and press Return.

19. Select Quit and press Return.

E) Exiting from the Symphony System

If you have completed this lesson, to exit from the SYMPHONY System refer to Appendix (B) : *Exiting from the Symphony System.*

F) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON • 12 OUTCOME:

SCORING

PARTICIPANTS	SPIKES	BLOCKS	DIGS	SERVES	TOTAL	RANGE
Jenny Mah	10	13	18	14	55	1
John Smith	16	12	14	12	54	2
Mary Jones	12	14	15	12	53	3
Sally Jones	10	14	12	15	51	4
Mike Johnson	12	16	10	11	49	5
Jimmy Black	15	12	12	8	47	6
AVERAGE	12.5	13.5	13.5	12	51.5	

LESSON 13 - ADVANCED TASKS FOR SPREADSHEET

Objectives:

1. To introduce the user to several advanced functions of SYMPHONY which are commonly used in Spreadsheet.

2. To save and print the revised spreadsheet.

Points to Remember:

1. This lesson is optional and may be omitted without affecting the continuity of the lessons which follow.

SPREADSHEET PROBLEM

Our existing spreadsheet, SCORE2, is now completely finished. However, we now wish to change this spreadsheet to be test marks for the same individuals. We will have to make several alterations.

1. The first alteration will be using spreadsheet, SCORE2, change the following titles:

SCORING to GRADES

PARTICIPANTS to STUDENTS

SPIKES to TEST 1

BLOCKS to TEST 2

DIGS to TEST 3

SERVES to TEST 4

RANGE to RANK

Note: the students names will not change. We will use the same names. The titles AVERAGE and TOTAL will also remain the same so do not alter these.

2. The second alteration will be to add what the tests are actually out of. For the test results, TEST 1 is out of 50, TEST 2 is out of 75, TEST 3 is out of 50, and TEST 4 is out of 75. Place these numbers in brackets on the line below the each of the titles. It should look like this:

TEST 1 TEST 2 TEST 3 TEST 4

<50> <75> <50> <75>

NOTE: the brackets that you must use.

3. The third alteration is to change each of the students scores in order of test results.

Jenny Mah scored 48, 68, 45, 82 respectively.

John Smith scored 46, 67, 43, 69 respectively.

Mary Jones scored 41, 69, 47, 70 respectively.

Sally Jones scored 33, 63, 40, 66 respectively.

Mike Johnson scored 43, 72, 45, 71 respectively.

Jimmy Black scored 32, 69, 44, 70 respectively.

4. The fourth alteration is to calculate the TOTAL of each of the STUDENTS, however, note that TEST 1 is worth 20%, TEST 2 is worth 30%, TEST 3 is worth 20% and TEST 4 is worth 30%. This will involve using a more advanced formula in the TOTAL column.

5. The fifth alteration is to recalculate the RANGE using the

range fill procedure. Note: remember to sort the students in descending order first.

7. The final alteration is to re-align your labels again.

SPREADSHEET SOLUTION

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Appendix (A) : *Entering the Symphony System*. However, because we have already formatted our diskettes, steps 7 through 11 may be eliminated.

B) Retrieving Your File

We wish to retrieve our file *SCORE2*. Refer to Appendix (E) : *Retrieving Your File*.

C) Changing Titles

1. Retrieve spreadsheet, SCORE2.
2. Move your cell pointer to the cell that contains SCORING and type in *GRADES* using capital letters and press Return.
3. Move to the cell containing PARTICIPANTS and type in *STUDENTS* using capital letters and press Return.
4. Move to the cell containing SPIKES and type in *TEST 1* using capital letters for TEST and press Return.
5. Move to the cell containing BLOCKS and type in *TEST 2* using capital letters for TEST and press Return.
6. Move to the cell containing DIGS and type in *TEST 3* using capital letters for TEST and press Return.
7. Move to the cell containing SERVES and type in *TEST 4* using capital letters for TEST and press Return.
8. Move to the cell containing RANGE and type *RANK* using

capital letters and press Return.

All the rest of the titles will remain the same.

D) Adding New Information

1. Move your cell pointer to the cell directly below TEST 1 and type *<50>* and press Return. Make sure to use < > and *not* ( ).

2. Move to the cell directly below TEST 2 and type *<75>* and press Return.

3. Move to the cell directly below TEST 3 and type *<50>* and press Return.

4. Move to the cell directly below TEST 4 and type *<75>* and press Return.

5. Move to the cell directly below TOTAL and type *<100>* and press Return.

E) Changing Scores

1. Move your cell pointer to the first number, 10 in Jenny Mah's scores and replace her 10 with *48* and press Return, then move to her 13 and type *68* and press Return, then move to her 18 and type *45* and press Return and finally move to her 14 and type *62* and press Return.

2. Repeat this procedure for each of the students; replacing their old scores with the new ones as below (in order):

John Smith old scores replace with *46, 67, 43, and 69*

Mary Jones old scores replace with *41, 69, 47, and 70*

Sally Jones old scores replace with *33, 63, 40, and 66*

Mike Johnson old scores replace with *43, 72, 45, and 71*

Jimmy Black old scores replace with *32, 69, 44, and 70*

F) Using a More Advanced Formula

Remember that / = division and * = multiplication

1. Move to cell F5 and type in the formula: *B5/50*20+C5/75*30+D5/50*20+E5/75*30* . Press Return and your first student's grade out of 100 should appear (89.2).

Note: you multiply by 20, 30, 20, and 30 respectively because that is the weighting of each separate test out of 100%.

2. Move to cell F6 and type in the formula: *B6/50*20+C6/75*30+D6/50*20+E6/75*30*. Press Return and your second student's grade out of 100 should appear (90).

3. We will copy this formula to save time. Press MENU (F10).

4. Select Copy and press Return.

5. Press Return again as we wish to copy from this cell (F6).

6. Type *F7..F10* and press Return. F7 will be 90.8, F8 will be 80.8, F9 will be 92.4 and F10 will be 86.

G) Recalculating the Range

First we need to sort column F before we recalculate the range.

Indicating the Sort Key

1. Press MENU (F10).

2. Select Query and press Return.

3. Select Settings and press Return.

4. Select Basic and press Return.

5. Select Database and press Return.

6. Type *A4..F10* as your database range and press Return. You want to include one line above.

7. Select Quit and press Return.

8. Select Sort-Keys and press Return.

9. Select 1st-Key and press Return.

10. Highlight F5 through F10 by pressing your TAB key and then the down arrow key until you have painted F5 through F10. Press Return.

11. Type *D* for descending and press Return. We will sort in descending order.

12. Select Quit.

13. Select Record-Sort and press Return.

14. Select All so all records are sorted during the sort. Press Return.

15. Select Quit and press Return.

Recalculating the Range

1. Press MENU (F10).

2. Select Range and press Return.

3. Select Fill and press Return.

4. Because our students are already in order, we will fill the range G5..G10. Type in *G5..G10* and press Return.

5. We wish to start with 1 so type in *1* as your Start Value and press Return.

6. We wish to increase by 1 each time so type in *1* as your Step Value and press Return.

7. We wish to stop at value 6 as we only have 6 students so type in 6 as your Stop Value and press Return.

Note: your range is now filled.

H) Aligning Your Labels Again

1. Move the cell pointer to the TEST 1 label.
2. Press MENU (F10).
3. Select Range and press Return.
4. Select Label-Alignment and press Return.
5. Select Right and press Return. We wish to align the labels with the numbers to the right.
6. Highlight the rest of the labels to the right by pressing the right arrow key until you have highlighted *TEST 1, TEST 2, TEST 3, TEST 4, TOTAL and RANK* labels.
7. Then press the down arrow key once so Test Totals are highlighted to be aligned as well.
8. Press Return and your labels should re-align to the right.

If you wish to save this spreadsheet, refer to Appendix (D) : *Saving Your Work - Saving a Worksheet Again - Under a New Name*. Use the new name - GRADE. This way you will not lose your old spreadsheet, SCORE2.

I) Printing Your Spreadsheet

To print your revised spreadsheet, refer to Lesson 12, Section D: *Printing Your Spreadsheet*. Just refer to the PRINTING section and do not worry about HIDING A COLUMN or DISPLAYING THE HIDDEN COLUMNS AGAIN.

J) Exiting from the Symphony System

If you have completed your lesson for the day, refer to Appendix (B) : *Exiting from the Symphony System*.

K) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System*.

LESSON #13 OUTCOME:

GRADES

STUDENTS	TEST 1 <50>	TEST 2 <75>	TEST 3 <50>	TEST 4 <75>	TOTAL <100>	RANK
Mike Johnson	43	72	45	71	92.4	1
Mary Jones	41	69	47	70	90.8	2
John Smith	46	67	43	69	90	3
Jenny Mah	48	68	45	62	89.2	4
Jimmy Black	32	69	44	70	86	5
Sally Jones	33	63	40	66	80.8	6
AVERAGE	40.5	68	44	68	88.2	

LESSON 14 - INTRODUCTION TO BUSINESS GRAPHICS

Objectives:

1. To create a bar graph from data which was generated in the spreadsheet of Lessons 11 and 12.

2. To save and print the graph.

Points to Remember:

1. To gain access to TYPE it is necessary to press and hold the Alt key and then press the F10 key.

A) Re-Entering the Symphony System

To re-enter the Symphony System for this lesson, refer to Appendix (A) : *Entering the Symphony System*. Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Entering the Graph Environment

1. Press TYPE by pressing and holding the Alt key and then pressing F10.

2. Select GRAPH and press Return. You should now be in the Graph environment.

C) Explanation of the GRAPH environment

1. We will introduce each of the GRAPH environment commands as we need them. To indicate the opening menu of the GRAPH environment make sure you are in the Graph environment and press F10 (Menu). This Graph window menu will provide you with the following options:

Attach command - will allow you to attach the graph to the graph window so you can view it

1st-Settings command- will allow you to specify settings for each range of data that you want displayed on the graph

2nd-Settings command- will allow you to control settings that affect the whole graph rather than just a range of data

Image-Save command - will allow you to save a group of graph settings and the current data in the specified ranges that accompany those settings to a separate file

2. There is also a Graph Menu in the SHEET environment. Press TYPE by pressing and holding the Alt key and then pressing F10.

3. Select SHEET and press Return.

4. Press MENU (F10).

5. Select Graph and press Return. The main graph menu that will appear will consist of:

Preview command - will allow you to view the graph after the graph settings have been defined

1st-Settings command- same as above in number 1.

2nd-Settings command- same as above in number 1.

Image-Save command - same as above in number 1.

Quit command - allows you to Quit the Graph command and return to the SHEET menu

D) Creating a Bar Graph

We will create a graph from our SCORING spreadsheet. Before you create a graph, you must decide which kind of graph you wish to represent your data. For our lesson we will create a bar graph. Refer to Appendix (L) for the *Basic Types of Graphs*. Note: Symphony offers six basic types of graphs.

In order to create a graph, you enter the information from a spreadsheet or database. For our purposes, we will use data from our spreadsheet, SCORE2, to create a simple BAR graph.

1. Retrieve your file, SCORE2. Refer to Appendix (E): *Retrieving Your File*.
2. Press TYPE (press and hold Alt key and then press F10).
3. Select SHEET and press Return.

DEFINING A GRAPH

4. Press MENU (F10).
5. Select Graph and press Return.
6. Select 1st-Settings and press Return.
7. Select Type and press Return.
8. Select Bar as we are going to create a bar graph. Press Return.

SELECTING A RANGE TO GRAPH

9. Select Range and press Return.

10. You have a choice, when creating a bar graph, to select a range from A through F. The X-range is for labelling the horizontal axis.

11. Choose the letter *A* and press Return.

12. Specify the range you wish to plot by typing *F5..F10*. We will use the TOTAL column from our spreadsheet, SCORE2, to plot the bar graph. Press Return.

13. Select Quit and press Return.

LABELLING THE DATA POINTS

14. Select Data-Labels and press Return.

15. Choose the letter *A* (A-values) and press Return.

16. Type in *A5..A10* so each of the bar graphs will be labelled for each participant. Press Return.

17. Select Center and press Return. When using a bar graph, the data-labels automatically situate above the bar in a center position.

18. Select Quit and press Return. Select Quit again and press Return.

19. Select Preview so you can view what you have created and press Return.

Note: when viewing the graph, the names will appear overlapped, however when you print the graph, this will disappear.

TITLING THE GRAPH AND THE AXES

20. Press Escape.

21. Select 2nd-Settings and press Return.

22. Select Titles and press Return.

23. Select First and press Return.

24. Type *RACQUETBALL SPORT CAMP* in capital letters and press Return. This will be the overall title of your graph.

25. Select X-axis and press Return.

26. Type *PARTICIPANTS* in capital letters for your X-axis title and press Return.

27. Select Y-axis and press Return.

28. Type *TOTAL POINTS* in capital letters for the title of your Y-axis and press Return.

29. Select Quit and press Return.

CHANGING THE HEIGHT OF THE GRAPH

30. Select Y-scale and press Return.

31. Select Type and press Return.

32. Select Manual-Linear and press Return.

33. Press Return again as we wish to keep our lower limit at zero.

34. Type in *60*, as our upper limit in our range is 55 and press Return. We use 60 as we want some space at the top of the graph environment.

35. Select Quit and press Return.

36. Select Quit again and press Return.

E) Saving the Graph Image

Note: we are still in the GRAPH environment menu.

1. Select Image-Save and press Return as we will be wanting to print our graph we have created but we must save it first.

2. Type in *GRAPH1* as the name and press Return.

3. Select Preview to view the graph again and then press

Return.

4. Press Escape.

5. Select Quit and press Return to leave the Graph menu.

F) Printing Your Graph

You will use PrintGraph Program diskette to print your graph. Before you can use this diskette, you must leave Symphony.

1. Press SERVICES (F9).

2. Select Exit and press Return.

3. Select Yes and press Return.

4. Remove the Help and Tutorial diskette from drive A and replace it with the PrintGraph Program diskette.

5. Select PrintGraph and press Return.

You will select commands in PrintGraph as you did in Symphony. First you will have to supply 4 pieces of information in order to print the graph: *1) the location of the graph file, 2) the location of the font files, 3) the name of the printer you wish to use, 4) the name of the graph file you wish to print.*

Naming The Location Of The Graph File

6. Select Settings and press Return.

7. Select Hardware and press Return.

8. Select Graphs-Directory and press Return.

9. Press Escape (Esc) and type in *B:* and press Return. The file we named to be printed is located in the diskette in the B drive.

Naming The Location Of Font Files

10. The A drive contains the font files that PrintGraph uses

(the PrintGraph diskette) and this is already indicated so continue with step 11.

Naming The Printer You Wish To Use

11. Select Printer and press Return.

12. Move your cell pointer to the appropriate printer you will be using and press Return.

13. Select Quit and press Return.

Naming Your Graph File You Wish To Print

14. Select Quit and press Return.

15. Select Image-Select and press Return.

16. We wish to print *GRAPH1* so select this and press Return.

You will now have returned to the main menu.

Now that we have supplied the 4 pieces of information, we are ready to print.

17. Turn on the printer and align the paper properly.

18. Select Align and press Return.

19. Select Go and press Return. Your graph will begin to print.

G) Exiting from the Symphony System

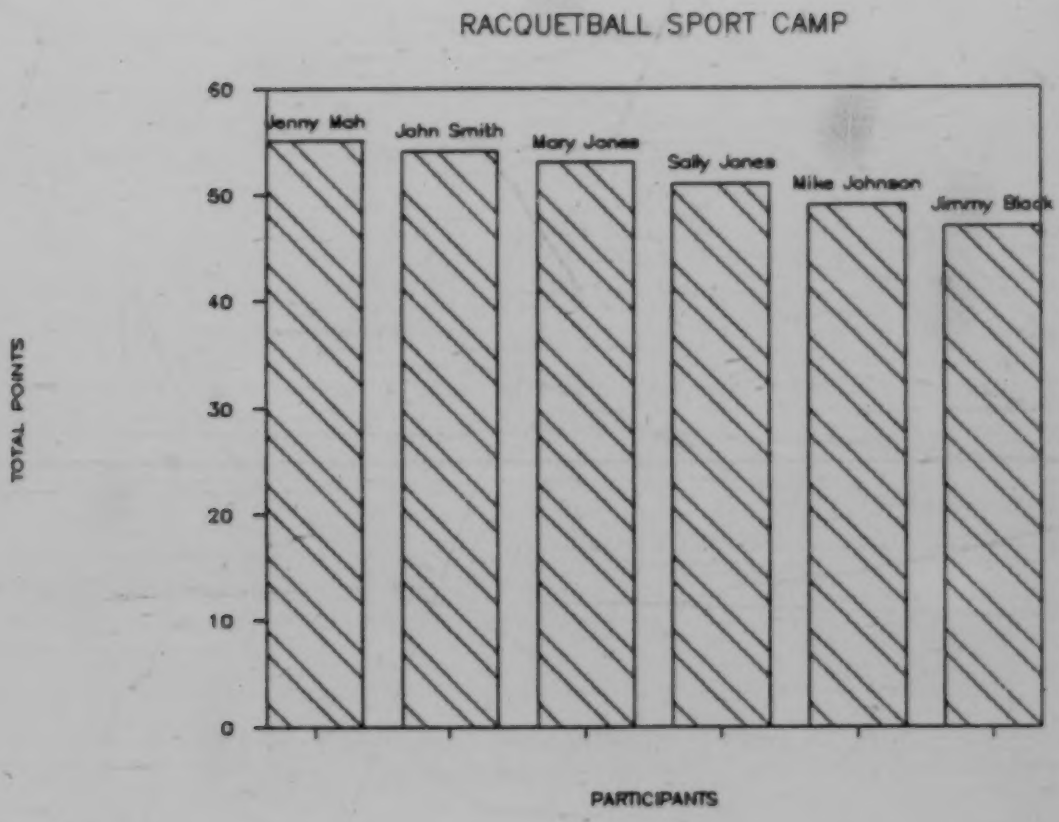
1. Once you have completed the printing of your graph, to leave PrintGraph select Exit and press Return.

2. Select Yes and press Return.

H) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #14 OUTCOME:



LESSON 16 - ADVANCED TASKS FOR BUSINESS GRAPHICS

Objectives:

1. To introduce the user to several advanced functions of SYMPHONY which are commonly used in Business Graphics.
2. To save and print the graph.

Points to Remember:

1. This lesson is optional and may be omitted without affecting the continuity of the manual.

BUSINESS GRAPHICS PROBLEM

You have now completed your first graphics project. However, we wish to create another more advanced graphics. To do this we must first begin with creating the following spreadsheet.

1. Create this spreadsheet of the attendance of females for three weeks at three different sports camps; volleyball, basketball and tennis:

FEMALES

	WEEK 1	WEEK 2	WEEK 3	TOTAL
VOLLEYBALL	19	23	34	76
BASKETBALL	23	33	43	99
TENNIS	23	14	21	58
TOTAL	65	70	98	233

Make sure to save this new spreadsheet under the name CAMPS. Refer to Appendix (D) : *Saving Your Work - Saving a New Worksheet*.

2. With this spreadsheet, CAMPS, create a *Pie Chart Graph* using the TOTALS of each of the camps as one section of the pie chart.

3. Title your graph *FEMALE CAMP PARTICIPANTS* as the first title and *UNIVERSITY OF ALBERTA* as the second title.

4. Make sure to title each of the pie sections with the appropriate sport name; volleyball, basketball, and tennis.

5. Next Crosshatch your pie slices using Hue code numbers 1 for Volleyball, 3 and 103 for Basketball, and 5 for Tennis.

6. And lastly, explode or highlight the pie slice for the Basketball Total.

BUSINESS GRAPHICS SOLUTION

A) Re-Entering the Symphony System

To re-enter the Symphony for this lesson, refer to Appendix (A) : *Entering the Symphony System*. Remember to skip steps 7 through 11 if you are not formatting a diskette.

B) Entering the Spreadsheet Environment

We will first create the spreadsheet, CAMPS, in the Spreadsheet environment. Once you have completed the steps to re-enter the Symphony System, the environment you are already in is the SHEET environment.

C) Creating the Spreadsheet

The following instructions will not be fancy instructions as the main purpose of this lesson is the creation of a pie chart graph not the spreadsheet.

ADJUSTING THE COLUMN WIDTH

1. On your blank spreadsheet, place the cell pointer in cell A1 (top, left hand corner).

2. Press MENU (F10).

3. Select Width and press Return.

4. Select Set and press Return.

5. Type in the number *12* for the width of column A and press Return.

Note: we will not change the width of columns B,C,D, and E. The default width is 9 so these columns will remain at this default width.

ENTERING YOUR LABELS AND DATA

1. Move the cell pointer to cell C1.

2. Turn on Caps Lock key and type *FEMALES* and press Return.

3. Move the cell pointer to cell B3 and type *WEEK 1* and press Return.

4. Move the cell pointer to cell C3 and type *WEEK 2* and press Return.

5. Move the cell pointer to cell D3 and type *WEEK 3* and press Return.

6. Move the cell pointer to cell E3 and type *TOTAL* and press Return.

7. Move the cell pointer to cell A4 and type *VOLLEYBALL* and press Return.

8. Move the cell pointer to cell B4 and type *19* and press Return.

9. Move the cell pointer to cell C4 and type *23* and press Return.

10. Move the cell pointer to cell D4 and type *34* and press Return.

11. Move the cell pointer to cell E4 and type *76* and press Return.

You have completed the Volleyball attendance in your spreadsheet. Complete the Basketball and Tennis entries by moving the cell pointer to the appropriate cell and typing the appropriate labels and data. Once you have completed these two rows, turn off the Caps Lock key.

ENTERING REPEATED CHARACTERS

1. Row 7 is a repeated character through each cell.
2. Move the cell pointer to cell A7, making sure that the Caps Lock key is turned off.
3. Type \= and press Return (\ means that you want to repeat the following character through the entire cell).
4. Move the cell pointer to cells B7, C7, D7, and E7 consecutively, and repeat step 3.

COMPLETING THE SPREADSHEET

1. Turn on the Caps Lock key again and move the cell pointer to cell A8. Type *TOTAL* and press Return.
2. Move the cell pointer to cell B8 and type *65* and press Return.
3. Move the cell pointer to cell C8 and type *70* and press Return.
4. Move the cell pointer to cell D8 and type *98* and press Return.
5. Move the cell pointer to cell E8 and type *233* and press Return.
6. Turn off the Caps Lock key once more.

ALIGNING YOUR LABELS

Note: when entering labels into a spreadsheet, the default

'right justifies' the label. When entering numbers into a spreadsheet, the default 'left justifies' the numbers.

1. Move the cell pointer to the label, *WEEK 1*, in cell B3.
2. Press MENU (F10).
3. Select Range and press Return.
4. Select Label-Alignment and press Return.
5. Select Right and press Return. We wish to align the labels to the right - the same as the numbers are aligned.
6. Highlight the rest of the labels in row 3 by pressing the right arrow key until you have highlighted the WEEK 1, WEEK 2, WEEK 3 and TOTAL labels.
7. Press Return and your labels will align to the right.

D) Saving Your Spreadsheet

Before your continue, make sure that you save your new spreadsheet. You will save this file under the name *CAMPS*. Refer to Appendix (D) : *Saving Your Work - Saving a New Worksheet*.

E) Creating a Pie Chart Graph

DEFINING THE GRAPH

1. Press MENU (F10).
2. Select Graph and press Return.
3. Select 1st-Settings and press Return.
4. Select Type and press Return.
5. Select Pie and press Return.

SELECTING A RANGE TO GRAPH

6. Select Range and press Return.
7. With a pie chart graph, you must select A as the range so

select *A* (A data values) and press Return.

8. Specify the range you wish to compare in your pie chart. We will compare the totals of each sport camp over the three weeks, so type in *E4..E6* and press Return.

LABELLING PIE SLICES

Because a pie chart graph does not have an X or Y axis, the X label range is used to select the labels for the pie slices.

9. Select X (X data values) and press Return.

10. Type *A4..A6* as we wish each pie slice to be labelled with the appropriate sport; Volleyball, Basketball and Tennis.

11. Press Return.

12. Select Quit and press Return.

13. Select Quit again and press Return.

TITLING THE GRAPH

14. Select 2nd-Settings and press Return.

15. Select Titles and press Return.

16. Select First and press Return.

17. Type *FEMALE CAMP PARTICIPANTS* and press Return.

18. Select Second and press Return.

19. Type *UNIVERSITY OF ALBERTA* and press Return.

20. Select Quit and press Return.

21. Select Quit again and press Return.

22. Select Preview and press Return. We wish to view the graph before we continue.

Note: Symphony has automatically calculated the percentage of each label and placed it next to the appropriate sport label.

Note: Symphony is not able to display the real value of each sport total. It is always a percentage.

23. Press Escape to return to the MENU.

24. Select Quit and press Return.

CROSSHATCHING PIE SLICES

For Crosshatching Pie Slices we will first add some information to our spreadsheet, CAMPS.

1. Move the cell pointer to cell F4 and type *1*. Press Return. The *1* represents the Hue code to crosshatch with a certain pattern.

2. Move the cell pointer to cell F5 and type *3*. Press Return. The *3* represents another Hue code for a crosshatching pattern.

3. Move the cell pointer to cell F6 and type *5*. Press Return. The *5* represents still another Hue code for a crosshatching pattern.

4. Press MENU (F10).

5. Select Graph and press Return.

6. Select 1st-Settings and press Return.

7. Select Range and press Return.

8. Select B (B data values) and press Return.

9. Type *F4..F6* and press Return. This is the address of the new data you just added.

10. Select Quit and press Return.

11. Select Quit again and press Return.

12. Select Preview and press Return.

Note: the different patterns of crosshatching.

13. Press Escape.

14. Select Quit and press Return.

EXPLODING OR HIGHLIGHTING A PIE SLICE

We wish to explode the Basketball Pie Slice but first we must add some new information to our spreadsheet, CAMPS.

1. Move the cell pointer to cell F5 (Basketball Hue code) and change the 3 to 103 by typing *103*. Press Return.

Note: when you add 100 to a B range value it will explode it for you. Values under 100 do not explode pie slices.

2. Press MENU (F10).

3. Select Graph and press Return.

4. Select Preview and press Return. Because you have already highlighted F4..F6 it automatically explodes the Basketball Pie Slice.

5. Press Escape.

F) Saving the Graph Image

1. Select Image-Save and press Return as we will be wanting to print our graph we have created but we must save it first.

2. Type in *CAMPS* as the name and press Return.

3. Select Preview to view the graph again and then press Return.

4. Press Escape.

5. Select Quit and press Return to leave the Graph menu.

G) Printing Your Graph

If you wish to print your graph, refer to Lesson 14, Section F) : *Printing your Graph*. However, in step 15 instead of selecting GRAPH1, select *CAMPS* and press Return.

H) Exiting from the Symphony System

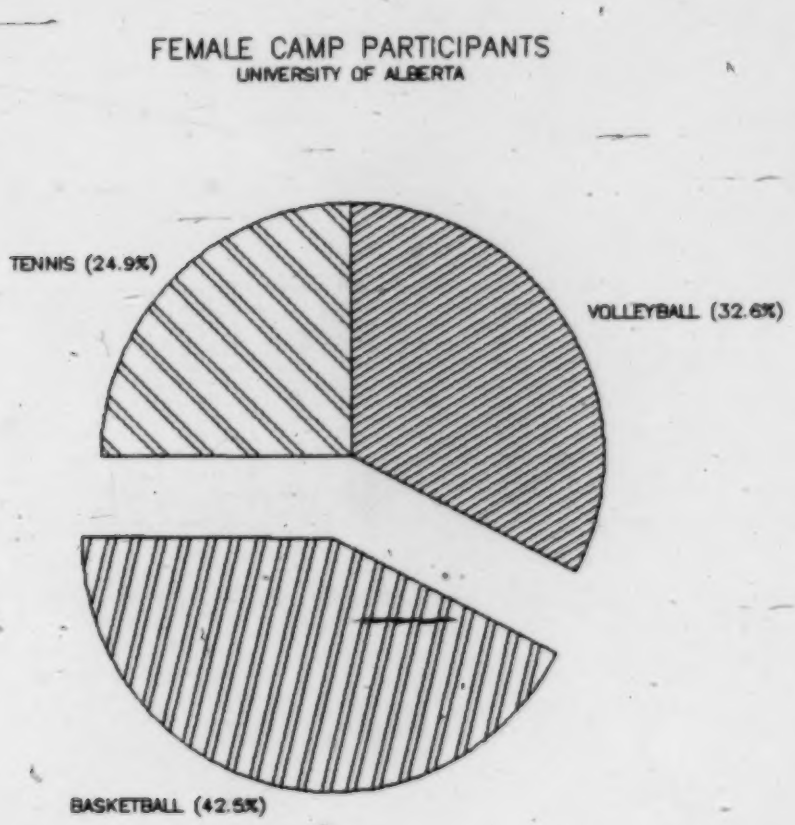
1. Once you have finished printing your graph, select Exit and press Return to leave PrintGraph.

2. Select Yes and press Return.

I) Exiting from the Access System

To complete your exit, refer to Appendix (C) : *Exiting from the Access System.*

LESSON #15 OUTCOME:



APPENDIX A

ENTERING THE SYMPHONY SYSTEM

Note: If you do not wish to format diskettes, skip steps 7 through 11 inclusive.

1. To enter the Symphony System you first have to enter the DOS (Disk Operating System) as you practiced in Lesson 2 and 4.

2. Insert IBM DOS diskette in drive A and close the door.

3. Turn the monitor and the computer on.

4. Enter the DATE, if necessary, in the form MM-DD-YY and press RETURN.

Note: some computers will provide the date automatically.

5. Enter the TIME, if necessary, in the form HH-MM using the 2400 hour clock system and press RETURN. Note: some computers will provide the time automatically.

6. The A> will appear. You are now entered into DOS.

7. Before we continue, we will need to format 2 diskettes to use during our course.

8. With your DOS diskette in drive A, type in *format b:* after the A> and then press RETURN.

9. Insert a new diskette in drive B and press RETURN when ready (there are 39 tracks to a diskette so wait until the screen displays FORMAT COMPLETE).

10. Then the computer will ask if you want to format another diskette. If you do not want to format another diskette, type in n for No. If you wish to format another diskette, type in y for Yes. In either case, you must press RETURN to confirm

your choice. We will need another diskette later in the course so choose Y in order to format another diskette at this time and make sure you remember which 2 diskettes are formatted.

11. Once you have formatted your diskettes, the A> will appear.

12. Remove the DOS diskette from drive A and place back in its cover. Insert SYMPHONY PROGRAM DISKETTE in drive A and close the door.

13. Type in *ACCESS* after the A> and press Return. The screen will display the SYMPHONY Access System menu.

14. With the SYMPHONY PROGRAM DISKETTE still in drive A, and the menu pointer already highlighting SYMPHONY, press Return as we wish to enter the SYMPHONY Program.

15. Remove the SYMPHONY PROGRAM DISKETTE from drive A and place in its cover.

16. Insert the SYMPHONY HELP & TUTORIAL DISKETTE in drive A and close the door.

17. Insert your FORMATTED DISKETTE (or work diskette) in drive B and close the door.

18. Press RETURN. You are now ready to start SYMPHONY.

APPENDIX B

EXITING FROM THE SYMPHONY SYSTEM

At various times when using the computer you will want to exit from the SYMPHONY Program.

1. Press SERVICES (F9).

2. The screen will display the Service Menu.

3. Select Exit and press Return as we wish to exit from SYMPHONY.

4. Select Yes and press Return (If you have changed your mind and do not wish to exit from SYMPHONY, you should select No instead of Yes).

APPENDIX C

EXITING FROM THE ACCESS SYSTEM

Once you have exited from SYMPHONY, the screen will display the Access System, as noted previously, and you must exit from this system.

1. To exit from the Access System and return to the DOS prompt (A>), simply choose Exit and press Return. The screen will immediately return you to the A>.

2. Remove the diskettes from the disk drives and return them to their protective covers.

3. Make sure to turn off your monitor and computer once you have completed your tasks for each session.

APPENDIX D

SAVING YOUR WORK

NOTE: If you do not save your work before you leave SYMPHONY or start to work on another file, you will lose the new work since you enter the system.

SYMPHONY will allow you to either *Save a New Worksheet* or *Save a Worksheet Again - Under the Same Name or Under a New Name*.

Saving a New Worksheet

1. Make sure you have placed a formatted diskette in drive B

2. Press SERVICES (F9).

3. Select File and press RETURN.

4. Select Save and press RETURN.

Note: When saving for the first time B:\ will appear on the top line. This indicates that the file will be saved in drive B and then it prompts you to name the file. If other files exist on your diskette, these will be displayed on the second line from the top.

5. Press ESCAPE to clear the current drive specifier/directory and type the name you wish for your file. Note: you must not include spaces in this title and it can only be a maximum of 8 letters and/or numbers.

If you make an error in typing the name of the file, use BACKSPACE to make your corrections.

6. Press RETURN.

You will note that the next time you request the file that there is an extension at the end of your file name. This is called a File Name Extension and indicates the type of file.

.APP indicates Add-in application file

.CCF indicates Communications configuration file

.CTF indicates Character code translation file

.PIC indicates Graph (picture) file

.PRN indicates Print file

.WR1 indicates Worksheet file

Saving a Worksheet Again

Under the Same Name

1. Press SERVICES (F9).

2. Select File and press RETURN.

3. Select Save and press RETURN.

4. Select the file name that you are saving again and press RETURN.

5. Then select YES if you want to update the file with your most recent work (select NO if you have changed your mind and want to leave the file the old way).

The worksheet is still on the screen. You may continue working on it, select another worksheet, or clear the screen by selecting New from the SERVICES menu.

Under a New Name

1. Press SERVICES (F9).
2. Select File and press Return.
3. Select Save and press Return.
4. Press ESCAPE to clear the present name on top line.
5. Type in the new name that you wish.
6. Press RETURN.

Note: Symphony saves this new file, leaving the old file the way it was.

APPENDIX E

RETRIEVING YOUR FILE

In order to retrieve a file, it must have been saved first.

1. Press SERVICES (F9).
2. Select File and press Return.
3. Select Retrieve and press Return.
4. If you have more than 5 files on your disk, press MENU (F10) and they will all be displayed at once.

5. Move your cursor to highlight the name of the file you wish to retrieve and press Return.

APPENDIX F

CHANGING TO A NEW OR BLANK WORKSHEET

As you are progressing through this manual, there may be times when you wish to begin with a NEW or blank worksheet in the DOC or SHEET environment.

1. Make sure you are in the Symphony program and that you have saved your current work with an updated copy as once you select a new worksheet, your current work will all disappear from the screen.

2. Press SERVICES (F9).

3. Select New and press Return.

4. Symphony will ask you if you wish to erase all data from all windows you are currently in and create a new worksheet. Select Yes and press return.

Note: If you change your mind and do not wish to erase all your current work and create a new worksheet, select No and press Return.

APPENDIX G

SPECIAL PRINT ATTRIBUTES AND CODES

Remember : Ctrl key & B - Begins the Print Attribute
Ctrl key & E - Ends the Print Attribute

Code	Attribute
B or b	Bold Text
I or i	Italic
U or u	Underline Words Only

+	Superscript
-	Subscript
X or x	Strike Through
0 (Zero)	Bold Italic
1	Bold Underlined
2	Bold Italic Underline
3	Italic Underlined
4	Bold Superscript
5	Italic Superscript
6	Bold Subscript
7	Italic Subscript
8	Bold Italic
9	Bold Italic Superscript
S or s	Includes spaces in print attributes
Q or q	Do not include spaces

APPENDIX H

HIGHLIGHTING YOUR WORK

When you are printing a document or using the Copy, Move and Erase commands, Symphony asks you to specify the block of text you want to work with. The text can consist of a single character, a sentence, a paragraph/paragraphs, or your entire word processing document. To specify the text, you highlight it by painting over the specific area.

Similarly, when you are in the spreadsheet environment and SYMPHONY asks you to specify a range, you have the option of highlighting the range on the screen or typing in the address. Highlighting is like painting over the area you have chosen.

If the Highlight is Already Anchored

In some cases, when you begin executing a command, the highlight will already be anchored (Anchored means that you are ready to paint over the selected text). The way you can tell this is that in the top left hand corner of the screen (control panel), Symphony will display the line and character position of the cursor (word processing) or cell address of the cell pointer (spreadsheet) *TWICE* in the control panel. (eg. 3,21..3,21 for word processing or B5..B5 for spreadsheet)

It is important to first of all move the cursor (word processing) to the beginning or end of the block of text you wish to highlight or move the cell pointer (spreadsheet) to the cell you want as one corner of the range. Then, if you want to highlight your work in various directions, decide which of the keys you will use.

1. In order to expand your highlight, use the following keys:

For Both Word Processing and Spreadsheet

LEFT ARROW - *will highlight left one character or cell.*

RIGHT ARROW - *will highlight right one character or cell.*

DOWN ARROW - *will highlight to the next line or down one cell.*

UP ARROW - *will highlight to the previous line or up one cell.*

For Only Word Processing

END & DOWN ARROW - *will highlight to the end of the paragraph.*

END & UP ARROW - *will highlight to the end of the document.*

END & RETURN - *will highlight to the next hard carriage return.*

END & character - *will highlight to the next point where character is located that you typed after pressing END.*

For Only Spreadsheet

END & HOME - *will highlight from the current cell to the same cell at the beginning of the spreadsheet.*

END & PgUp - *same as END & HOME.*

PgUp - *will highlight from the current cell Up one page.*

PgDn - *will highlight from the current cell Down one page.*

2. Press Return when you have covered the area you wish to highlight.

Note: If your cursor or cell pointer is not located in the proper area you wish to highlight:
Press ESCAPE to release the anchor.
Then move the cursor or cell pointer to the proper area.
Press TAB to reanchor the cursor.
Then proceed with 1. and 2. above to complete your highlight.

If the Highlight is Not Anchored

In some cases, the highlight will not be automatically anchored. The way you can tell this is that in the control panel Symphony will ask you to specify the block of text (word processing) or range (spreadsheet) and then display the line

and character position of the cursor (word processing) or cell address of the cell pointer (spreadsheet) only *ONCE* (eg. 3,21 for word processing or B5 for spreadsheet).

1. In order to anchor and then highlight your text or range, first of all make sure that your cursor is either at the beginning or end of the text for word processing or your cell pointer is located in the cell you want as the corner of the range to be highlighted.

2. Press TAB and this will anchor your highlight!

3. Highlight your text or cells by using the previously mentioned keys above.

4. After you have highlighted the appropriate text or cells, press Return to complete the highlight.

Note: It is very important to move your cursor or cell pointer to the *exact* location before executing commands which will require you to use the highlight directions.

APPENDIX I

PRINTING YOUR WORK

WITH DEFAULT SETTINGS

1. Retrieve the file you wish to print. Refer to section on Retrieving Your File.

2. Turn on your printer.

3. Adjust the paper so the printing mechanism is at the top of the new page.

4. Press SERVICES (F9).

5. Select Print and press Return.

6. Select Align to reset Symphony's mechanism for counting

page and line numbers. Press Return.

7. Select Go and press Return to print your work.

8. Once your printing has been completed, select Quit, press Return and your file will return to the screen.

CHANGING THE DEFAULT SETTINGS - Page Numbers

1. Retrieve the file you wish to print. Refer to section on Retrieving Your File.

2. Turn on your printer.

3. Adjust the paper so the printing mechanism is at the top of the new page.

4. Press SERVICES (F9).

5. Select Print and press Return.

6. Select Settings and press Return.

7. Select Page and press Return.

8. Select Number and press Return.

9. Select Start-Page and press Return.

10. Type in the page number you wish to start printing from and press Return.

11. Select Number again and press Return.

12. Select End-Page and press Return.

13. Type in the page number you wish to end printing and press Return. Note: If you wish to print to the end of your document and you do not know how many pages it is, ensure that end-page reads 999 (default setting).

14. Select Quit and press Return.

15. Select Quit again and press Return.

16. Select Align to reset Symphony's mechanism for counting

page and line numbers. Press Return.

17. Select Go and press Return to print your work.

18. Once your printing has been completed, select Quit, press Return and your file will return to the screen.

APPENDIX J

FIELD TYPES FOR A DATABASE

L (Label) - usually contains text but can also be a combination of text and numbers (such as an address). Numbers, when used as labels, can not be used in calculations (such as postal codes or telephone numbers).

D (Date) - this contains a date (such as birthdate).

N (Number) - this contains a number that can be used in calculations (such as a price of something).

T (Time) - this contains a time.

C (Computed) - this contains the result Symphony calculates from a formula. Symphony automatically fills in the field after completing the specified calculation (such as adding up the total price of something through a calculation).

APPENDIX K

SPECIAL CHARACTERS FOR HEADERS & FOOTERS

@ - will fill in the current date

- will fill in the page numbers and automatically keep count

text - will put *text* in left position. (ie. page #)

|text - will put *text* in center position. (ie. |page *)

||text - will put *text* in right position as our example in Lesson 7, Section D.

texta||textb - will place *texta* in the left position and *textb* in the right position. (ie. Sport Camp||page *)

texta|textb|textc - will place *texta* in the left position, *textb* in the center position and *textc* in the right position. (ie. Sport Camp|e|page*)

APPENDIX L

BASIC TYPES OF GRAPHS

Line Graphs

With line graphs, you represent a range of values with a line. They can be used to emphasize trends in a large group of values that change over time (time-series data). An example could be plotting the interest rate movements for the month of June, 1987.

Simple Bar Graphs

With a simple bar graph, you represent a range of values using vertical bars of varying lengths in a side by side arrangement. They can be used to indicate the differences among several values. An example could be indicating how many Physical Education students and Education students have graduated in the past five years at the University of Alberta.

Stacked-Bar Graphs

With a stacked-bar graph, you compare different groups or sets of data while indicating the components and total of each data set (Ewing and LeBlond, 1984, p.416). The totals are arranged on top of eachother instead of side by side, as in a simple bar graph. An example could be to indicate the total number of Physical Education and Education students that have graduated in the past five years from the University of Alberta.

XY Graphs

With an XY graph, you represent two or more sets of values which are plotted as coordinates on the XY axis. They are useful in comparisons or correlations. An example could be to compare such items as age and income or educational achievements and salary.

Pie Chart Graphs

With a pie chart graph, you represent the relationship within a single set of values. Each value is a slice of the pie, and the sum of the values is the whole pie. An example could be to indicate how many students are in their first, second, third and fourth year of the Physical Education degree at the University of Alberta.

High-Low-Close-Open Chart Graphs

With a high-low-close-open chart graph, you represent price fluctuations of financial values. Some examples could be the movement of stocks or tracking commodities.

APPENDIX M

ASCII FILE PROCEDURES

The transfer of certain SYMPHONY files (eg. Document) to other Software Systems may require the conversion of the files to ASCII format. The procedure for this transfer is given below.

1. Retrieve the file which is to be converted into an ASCII file (eg. a letter etc.). Refer to Appendix (E) : *Retrieving Your File*.
2. Press SERVICES (F9).
3. Select Print and press Return.
4. Select Settings and press Return.

If the Start-Page is 1 and the End-Page is 999, continue with steps 13 through 22.

However, if this is not the case, we must change the Start-Page to 1 and the End-Page to 999. To do this continue with steps 5 through 22.

5. Select Page and press Return.
6. Select Number and press Return.
7. Select Start-Page and press Return.
8. Type in *1* and press Return.
9. Select Number and press Return.
10. Select End-Page and press Return.
11. Type in 999 (indicating to the end of the document) and press Return.
12. Select Quit and press Return.
13. Select Source and press Return.
14. Select Range and press Return.
15. Highlight the entire area to be converted into an ASCII

file and press Return.

16. Select Destination and press Return.

17. Select File and press Return.

18. Name the file (eg. ASCII) and press Return.

19. Select Quit to get out of Settings and press Return.

20. Select Align and press Return.

21. Select Go and press Return.

22. Close the file by selecting Quit and pressing Return.

Note: The file will be given an .PRN subscript which indicates Print File (eg. ASCII.PRN).

APPENDIX N

CONFIGURATION OF FILE DIRECTORY

To change the setting for the default drive for disk storage refer to the following directions. This drive assignment may have to be changed if you have a two-disk or hard disk system.

1. Enter the SYMPHONY system and make sure you are located in a blank worksheet.

2. Press SERVICES (F9).

3. Select Configuration and press Return.

4. Select File and press Return.

5. Press Escape.

6. Type *b:* if you are using a two-disk system or type *c:* if you are using a hard disk system and press Return.

7. Select Update and press Return.

8. Select Quit and press Return.

B. EVALUATION FORM RESULTS

"Microcomputer courseware ultimately will determine the success or failure of microcomputers in the classroom" (Cohen, 1983, p.14). One technique for evaluating the developed microcomputer manual was for each participant to complete an evaluation form (see Appendix A). The investigator's purpose with this form was to verify that the program design and development was useful, quality courseware. However, for educational courseware, "no widely agreed upon standards or criteria exist which would help to define what an effective software program is" (Cohen, 1983, p.9). Gallagher (1984) suggested that in order for computers and educational courseware to be effective instructional tools, educators should focus on the design, development and marketing aspect of the courseware. With this in mind, the investigator developed the evaluation form to include sections on design, development, marketing and as well, a personal assessment section.

In the discussion of the results of the evaluation form, the investigator did not summarize all the questions found in the evaluation form. Some questions did not provide useful information to the investigator and so were omitted from the discussion.

As well, it should be noted that individual differences between the participants becomes clear during the discussion of results section. As previously mentioned,

two participants had sport administration background, and presently work or study in a university setting whereas, two participants did not. One participant had some background computer literacy while the other three did not. This diversity in the participants was intentional and assisted the investigator in refining the manual for future use.

Keeping these issues in mind, the investigator will review the results of the design, development, personal and marketing sections of the evaluation form.

Manual Design Evaluation

This section of the evaluation form consisted of 20 questions referring specifically to the content and format of the lessons.

Question 1 asked whether or not the manual used examples that were compatible with the existing curriculum in the Physical Education and/or Education field today. The two participants with experience in the field indicated Yes. One participant explained that compatible examples included the mailing list, lesson plans, scoring spreadsheet and results and the graphics. The two participants without experience in these fields answered Did Not Know.

Because the manual was developed for the post-secondary level, question 3 asked participants if they thought the content of the manual was appropriate for this level. All participants were able to respond to this question and answered affirmatively.

Question 4 and 11 asked participants if the manual

was a useable, self-help manual that encouraged learning. All participants indicated that the manual was very enjoyable and objective in nature thereby encouraging learning. One participant indicated that the Appendices enhanced the useability of the manual. One participant however, indicated that more explanation was needed as to "why" commands were given. Another participant indicated some electronic page turning was needed.

In question 17, the investigator inquired into whether the manual allowed students making errors to be able to readily correct them. Two participants indicated Yes to this question. The other two participants indicated Sometimes to this question.

Question 5 asked participants if the manual covered a sufficient variety of exercises, to which three participants answered affirmatively. However, one participant indicated that more exercises in the spreadsheet environment would have been beneficial.

Questions 6, 8 and 16 focussed on whether the manual was an effective, well-organized instructional manual. All of the participants indicated that it was. The first participant, having used the manual under three different revisions, described the final manual as "exceptional".

The participants were asked in questions 7 and 9 if the directions in the manual were easy to learn and follow. Three participants found the directions easy to follow and learn. However, one participant stated that although the

directions were easy to follow, more practice was necessary in order to learn the contents of the manual.

The investigator was concerned with the adequacy of the documentation in the manual (question 14). One participant claimed that the lesson format used in the manual was excellent, as instructions were easy and direct. Another participant felt a greater reading list was necessary. Two participants made no comment.

As well, question 19 asked participants whether or not the content of the manual was an accurate account of the types of administrative tasks a physical educator would deal with. Two participants indicated that they did not feel qualified to answer, while the two participants with sport administration background found the manual to be what they believed was an accurate account, especially the advanced task called 'grades'.

Questions 12 and 20 were concerned with the types of problems encountered while proceeding through the manual. The first and second participants initially encountered directional problems which were corrected in the final product. The third participant indicated that reading too quickly caused some problems. The final participant had difficulty understanding the reasons behind why particular commands were being utilized.

Frustration was incurred by one participant in the area of applying additional formulas into a spreadsheet for their own purpose (question 15).

Question 13 asked participants whether or not, in the content of the manual, anything had been omitted. Although all participants indicated No, the suggestion was made to utilize additional exercises to reinforce learning. An additional comment by one participant requested more emphasis be put on explanations of the exercises throughout the manual.

Finally, in the design section the investigator asked participants if the instructions were free from spelling and grammatical errors (question 18). All participants responded affirmatively.

Development

The development section of the evaluation form referred to the purpose, capability and practicality of the manual.

Because the manual consisted of exercises dealing with sport administration, question 1 asked if the participants thought the manual had potential for expansion into an administrative job setting. Three of the participants indicated Yes, while one participant was unable to answer.

With respect to a sport administrative setting, participants were questioned as to the practicality of the manual assisting sport administrators in their daily tasks (questions 3,4 and 5). All participants believed it was practical and provided general knowledge for use with other

processing programs. However, one participant indicated that further instruction or information on spreadsheet, as well as an introduction to the communication aspect of Symphony would need to be included.

The investigator asked participants if they recommended the manual's use in physical education, recreation or education programs at other universities or colleges and if so, what benefits this manual could provide (question 2,11 and 12). All participants recommended the manual's use with undergraduate students as well as graduate students. One participant indicated that it would help the students to become computer literate and possibly aid in obtaining a job. One participant was unable to comment on the potential benefits.

The investigator also inquired as to whether or not the student would need to know something about computers in order to successfully complete the manual (question 10). All participants believed previous computer knowledge was not a requirement.

Reference manuals were available to the participants. The investigator questioned participants as to the appropriateness and usefulness of these manuals (question 6). One participant did not answer. Another participant indicated that the Symphony manuals were difficult to use as a beginner and that the investigators' manual helped to overcome the language barrier between Symphony, the beginning user and the reference manual. Two participants

indicated the manuals were appropriate and helpful.

Question 7 asked whether or not there was an absence of technical errors in the manual. Three participants indicated Yes, while one participant did not answer.

With respect to the Table of Contents (question 8) participants were asked if it explained the natural flow of the manual. All participants answered affirmatively.

All participants found the purpose of each exercise clearly explained within the manual (question 9).

Personal

The personal section of the evaluation form dealt with the participants' personal perception of the manual.

The first question inquired as to whether participants had any fears or doubts they would be able to follow the exercises to complete this manual. Three participants had no fears or doubts while, one participant did. The second section of the question asked whether the fears or doubts were overcome once the participant had completed the manual. The participant who admitted to concerns prior to using the manual indicated these were overcome during the process of completing the manual.

Question 3 asked participants if they enjoyed the exercises and if so, which ones. All participants enjoyed all of the exercises, with one participant indicating the graphics and database management lessons being the most enjoyable.

Having completed the manual, participants were asked if they had acquired a new skill that would assist them with their work (question 2). All participants thought the manual had provided them with a basic background to use with similiar integrated software packages. As well, all participants indicated that they would continue to use the software system Symphony for personal use (question 4).

Marketing

The marketing section of the evaluation form considered the perceived marketability or value of the manual by the participants. The investigator was concerned with improvements to the manual that would be necessary prior to potentially marketing it to other institutions (question 2). Participants commented in various ways. One participant believed that the addition of a communication section might entice government sport agencies to use the manual. Another participant thought additional exercises and further explanation of the use of commands might make it more marketable. Another participant indicated no improvements were necessary. Another participant did not comment.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

Microcomputers can be considered an important sport administrative tool. "As technical capabilities continue to increase, as costs continue to decline and as humans improve their abilities to utilize this new technology, a new era in administrative computer applications seems imminent" (Spuck and Atkinson, 1983, p.90). However, similar to learning the use of any tool, utilization of a microcomputer is dependent upon: 1) a particular purpose for its use, 2) the appropriate software and 3) taking time to learn the uses of the tool. These three issues are discussed in the following paragraphs.

The particular purpose of this study was to develop an introductory sport administration program for physical education, recreation and education students, utilizing a microcomputer. "The acquisition of basic computer competencies is of increasing importance to all students for success in an information society" (McMeen, 1986, p.43). At the outset of this study, it was deemed appropriate for Physical Education, Recreation and Education students in the area of Sport Administration to learn to use the microcomputer.

Student learning is the fundamental justification for education (Barrett & Hannafin, 1982). According to Bork

(1985), the major problem with microcomputers is that their potential advantages have not yet been realized. In sport administrative programs, limited numbers of instructors in the university and college settings have adapted the teaching of this technology. The reasons for this include the fact that limited, appropriate material is available, affording software and hardware is a problem and only a few teachers in the school and university settings have adequate knowledge of how to use computers for educational purposes. Hence, the microcomputer is misused or not used at all.

Students are faced with increasing pressure to become 'computer literate' prior to employment (Fruin & Bakshi, 1984). As mentioned previously, problems are evident with the teaching of microcomputers for sport administration. In this thesis the investigator developed an introductory manual of lessons for physical education, recreation and education students to begin learning the uses of a microcomputer for sport administrative purposes. This type of instruction manual did not formerly exist, according to the investigator's knowledge. Because this manual uses appropriate examples from the sport administrative field, it is recommended that the manual developed now be implemented in settings or curriculum that deal with sport administration. It is believed that this manual would assist in initiating computer literacy for students of these fields.

With most types of research, validity and reliability

factors are also a concern. As previously mentioned, these factors were not addressed within the scope of this thesis. It is therefore recommended that quantitative research methods be developed to test the curriculum. One possible approach would be to implement the use of the manual in the University of Alberta Bachelor of Physical Education degree program (Macnab, 1986). Students could then use the manual and it could be concurrently evaluated to establish the curriculum's reliability and validity.

It is also recommended that, along with this implementation for evaluative purposes, the manual be developmental in nature. It would require continual revisions, updates or additions in order to ensure a high quality course offering for students in sport administration.

A follow-up to student evaluation of the manual is to determine whether the manual does, in fact, assist these same students in accomplishing administrative tasks once they are employed in sport settings. Once again, quantitative research methods would need to be utilized in determining this.

The objective of this thesis, to adapt an existing integrated software system to create an effective introductory microcomputer course for physical education, recreation or education students for sport administrative purposes, was accomplished. The capabilities and limitations of the Symphony system, as well as the needs of

the students in these fields were considered. The lessons outlined in the investigator's result section are effective for students in these fields to begin learning the microcomputer for sport administrative purposes. Completion of all 15 lessons will provide each student with some introductory knowledge as to the capabilities and functions of an integrated microcomputer software system.

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APPENDICES

APPENDIX A

EVALUATION OF SYMPHONY SYSTEM INSTRUCTIONAL MANUAL

Objectives

The objectives of the course you have completed were:

1) to introduce you to the computer using word processing, database management, spreadsheet and graphics applications from the Symphony system.
2) to enable you, through the practical examples, to develop a hands-on ability using the integrated software Symphony.
3) to enable you, as the student, to progress at your own pace into more complex applications.

Keeping in mind these objectives, an evaluation form has been structured for you to complete.

Introduction

The evaluation process of any educational manual is very important to educators. This manual has been written for post-secondary physical education or education students to learn an integrated computer software system called Symphony. In order for this manual to become an effective instructional tool, the evaluation process must be taken very seriously.

The following questions will allow the researcher to produce a better quality manual that can be used for future applications. Please feel free to make comments at any time during this evaluation.

The evaluation form is four sections: design, development, personal and marketing.

Thank you for helping me.

Design

1. Does this manual use examples that are compatible with the existing curriculum in the Physical Education and/or Education field today?

_____ YES _____ NO _____ SOME

Explain _____

_____

_____

2. Do you feel this manual is designed for a wide-range age group?

_____ YES _____ NO

If No, specify which ages _____

_____

3. Do you feel the content of this manual is appropriate to the intended post-secondary level?

_____ YES _____ NO

If No, specify what level it should be for _____

_____

4. Do you feel the exercises in this manual encourage learning not force learning? (ie. can individual use his/her mind to do additional drills/exercises or is it just an electronic page turner?)

Comment _____

_____

_____

5. Did the manual cover enough of a variety of exercises to be helpful to the user?

_____ YES _____ NO

If No, which exercises would you include or remove _____

_____

_____

6. Do you feel this is an effective instructional manual?

_____ YES _____ NO

If Yes or No, in what ways? _____

_____

_____

7. Were you able to follow the directions of the manual with ease?

_____ YES _____ NO

Why or why not? _____

_____

_____

_____

8. Was the manual organized in an effective manner?

_____ YES _____ NO

If No, how would you organize it better? _____

_____

_____

9. Were the contents of the manual easy to learn and use?

_____ YES _____ NO

If No, where were the difficulties? _____

_____

_____

10. Were the exercises efficiently accomplished by the user?

_____ YES _____ NO

If No, which exercises were difficult to efficiently accomplish?

_____

_____

_____

11. Do you feel this could be a useable, self-help manual?

_____ YES _____ NO

If No, why not? _____

_____

_____

12. What kinds of problems did you encounter as you proceeded through this manual?

List them _____

_____

_____

_____

13. In the content of the manual, do you feel there has been anything overlooked or left out?

_____ YES _____ NO

If Yes, what has been overlooked or left out? _____

_____

_____

_____

14. How adequate is the documentation of the manual? Is it recent, comprehensive, and/or readable?

Comment _____

_____

_____

15. Did you incur any frustration using the manual?

_____ YES _____ NO

If Yes, which areas did you incur frustration? _____

_____

_____

16. Was the Table of Contents laid out well?

_____ YES _____ NO

If No, explain _____

_____

_____

17. Does the manual allow for students making errors to be able to correct them?

_____ YES _____ NO _____ SOMETIMES

18. Are the instructions free from spelling and grammar errors?

_____ YES _____ NO

If No, specify the specific areas that have spelling and/or grammar errors _____

_____

19. Would you say that the content of this manual is an accurate account of the types of administrative tasks a physical educator will be dealing with?

_____ YES _____ NO _____ DO NOT KNOW

Comment _____

_____

20. Comment on any barriers or hurdles that you encountered while proceeding through this manual?

_____

_____

_____

Development

1. Does the manual have adequate capability for expansion into an administrative job setting?

_____ YES _____ NO _____ DO NOT KNOW

Comment _____

_____

2. Would you recommend this manual for other university's or colleges to integrate into their physical education, recreation or education programs?

_____ YES _____ NO

If No, why not? _____

_____

3. Do you feel the Symphony system is a practical system for administrators to use?

_____ YES _____ NO

Do you know of any other programs that may be more suitable?

List them and their uses _____

_____

4. If you were to obtain an administrative position within the sport area, would you be able to adapt this manual for practical use? (word processing, database management, spreadsheet, or graphics?)

_____ YES _____ NO _____ SOME PARTS

Which uses ? _____

_____

5. Is this manual appropriate to assist sport administrators in their daily tasks?

_____ YES _____ NO _____ NOT SURE

If No, why not? _____

_____

6. Were the reference manuals appropriate and helpful?

_____ YES _____ NO

If No, which ones were not and why? _____

_____

_____

7. Was there an absence of technical errors?

_____ YES _____ NO

If No, specify the errors _____

_____

_____

8. Did the Table of Contents explain the natural flow of the manual?

_____ YES _____ NO

If No, specify _____

_____

9. Did the introduction to each exercise clearly explain the purpose of the exercise?

_____ YES _____ NO _____ SOME DID, SOME DID NOT

If No or Some Did, Some Did Not specify which did not _____

_____

_____

10. Do you feel that the student would need to know something about computers in order to complete this manual successfully?

_____ YES _____ NO

If Yes, what should they know? _____

_____

_____

11. What benefits, if any, can you see in implementing this manual to teach a computer course to physical education, recreation or education undergraduate students?

List them (if any) _____

_____

_____

_____

12. Would you feel that this manual could be used by graduate students as well as undergraduate students?

_____ YES _____ NO

If No, why not? _____

_____

_____

Personal

1. Did you have any fears or doubts that you would be able to complete this manual successfully?

_____ YES _____ NO

If Yes, did you overcome these and find that the manual was easy to follow?

_____ YES _____ NO

Comment _____

_____

2. Do you feel that having completed this manual, you have acquired a new skill that will aid you with your work?

_____ YES _____ NO _____ DO NOT KNOW

Explain _____

_____

_____

3. Did you enjoy doing the exercises in this manual?

_____ YES _____ NO _____ ONLY SOME

Why or why not? _____

_____

_____

Which ones did you enjoy and which ones did you not enjoy?

_____

_____

4. Will you use the system Symphony now that you have completed this manual?

_____ YES _____ NO _____ SOME PARTS

If Yes or Some Parts, for what purposes will you use Symphony?

_____

_____

Marketing

1. Do you feel that this manual should be made available to other institutions besides the University of Alberta?

_____ YES _____ NO

If Yes, which institutions? _____

_____

_____

2. What improvements should be made if this manual were to be put on the market for other institutions?

_____

_____

_____

_____

_____

THANK YOU VERY MUCH FOR YOUR TIME. I HOPE THAT YOU ENJOYED THIS MANUAL!!!!

Additional comments are welcomed.....

APPENDIX B

MICROCOMPUTER - 13 EDUCATIONAL PURPOSES

Watts (1981) and Roecks (1981)

1. Administrative Applications
   - Accounting, payroll and employee records
   - Attendance, grades and student records
   - Timetabling, planning systems
2. Curricular Planning Applications
   - Resource information file
   - Production of instructional materials
3. Professional Development
4. Library
5. Research
6. Guidance and Special Services
   - Vocational counselling
   - Diagnosis and remediation
7. Testing
   - Test construction
   - Test scoring
   - Test evaluation and analyses
8. Instructional Aid
9. Instructional Management
10. Computer-Assisted Learning
11. Computer Awareness and Literacy
12. Computer Science
13. Institutional Coordination
    - Information sharing
    - Coordination of existing computer services

APPENDIX C

MICROCOMPUTER - ADMINISTRATIVE USES

Spuck and Atkinson (1983)

1. Student Applications
   - Student scheduling
   - Grade reporting
   - Grade and transcript information
   - Daily and summary attendance accounting
   - Student and family demographic information
   - Health records
   - Instructional management
   - Test scoring and summary information
   - Tuition and fee statements
2. Personnel Applications
   - Payroll checks and deductions
   - Personnel records
   - Staff assignments
   - Certification records
   - Health records
   - Tax information and reports
3. Financial Applications
   - Budgeting/accounting
   - Accounts receivable/payable
   - General ledger
   - Purchase order generation
   - Salary schedule analysis and forecasting
4. Facilities/Equipment
   - Room locations/capacities
   - Room assignments/utilization
   - Equipment inventories
   - Maintenance scheduling
   - Energy utilization/control
5. Research/Planning Applications
   - Budget forecasting
   - Bus routing
   - Statistical analysis
   - Test item analysis
   - Project planning/evaluation (PERT/CPM)
6. Office Applications
   - Filing systems
   - Word processing
   - Mailing lists and labels
7. Library Applications
   - Bibliographical information and retrieval
   - Circulation
   - Cataloging
   - Purchasing